

## 12.5 (13/07/2017)

### Changes

DWP export: the Normalize option is now on by default  
FL Studio Mobile projects are now loaded into the FL Studio Mobile plugin  
ZGE Visualizer: four new effects from StevenM (Grid, ImageSphereWarp, Luminosity and ScanLines)  
Ctrl+L now assigns a channel to an unused mixer track, when the channel rack is focused

DirectWave: it's now possible to save monolithic .dwp files  
DirectWave: "Export for FL Studio Mobile" option saves monolithic .dwp file  
DirectWave: loading a monolithic .dwp file now also sets the monolithic option  
Control Surface: new "Label" control type  
ZGE Visualizer: new effect from StevenM: Edge Detect

### Bugfixes

Abort project doesn't work when project is loaded from the browser or dropped on FL  
Automatically created audio clips have audio that's out of sync  
Dragging a .dwp file to the channel rack creates a channel called "DirectWaveTrack"  
Dropping plugin preset on effect slot with same plugin loaded doesn't reset slot name  
DWP export: root note not saved in exported samples  
DWP export: octaves after the last zone are labelled incorrectly on the preview keyboard  
DWP export: zones for the last key range are sometimes empty  
Files in FL search paths take precedence over files in zipped loop  
Focusing a channel creates a pitch knob range undo event  
Free mixer track assignment doesn't work for some detached plugin windows  
Initialized controller values are not loaded correctly for projects with old Fruity Balance plugins  
"Unlock all playlist tracks from content" macro doesn't set size of grouped tracks  
No undo when dropping a pattern from the picker panel on the playlist  
Preview notes do not cut themselves  
Scroll in picker panel is too fast while previewing items  
Sort by name on pattern picker panel results in strangely named patterns in the browser  
Stretching audio in the playlist changes the clip unexpectedly when the time stretch multiplier is used  
Toolbar is too wide at low screen resolution  
Touch keyboard doesn't center on root note when key width changes

Control Surface: button and checkbox controls don't show up as internal controllers  
Control Surface: labels disappear behind controls and other z-order issues  
Control Surface: button and checkbox caption font height is not scaled correctly  
Control Surface: reset via middle click doesn't work when minimum and maximum values have changed  
Control Surface: bevel doesn't remember name  
Control Surface: strange colors using the Rounded Gradient Rectangle preset  
Dashboard: some controls exported to text are scaled incorrectly  
DirectWave: missing indicator for played key and velocity  
DirectWave: invalid loop end after import of soundfont  
DirectWave: edit control remembers the range of the previously edited item  
DirectWave: trigger type label not updated when a trigger group is selected  
DirectWave: LFO wave forms are broken  
DirectWave: zone name colour in zone list is incorrect if there is only one zone  
DirectWave: no longer imports soundfont files  
DirectWave: edit box doesn't hide when zone list is scrolled  
DirectWave: no zone preview rectangle in some situations  
DirectWave: UI not updated when sample is dropped  
FPC: pads in bank B don't light up in dual bank view  
FPC: can't drop samples on pads for bank B in dual bank view  
Fruity Balance: automation and control links from old version aren't converted correctly  
Fruity Delay 3: crash on knob automation  
Fruity Multiband Compressor: crackles and volume bumps with multiple instances inside Patcher  
Fruity Reeverb 2: ringing with some settings  
Fruity Slicer: crash on load (64bit)  
MIDI Out: incorrect channel when using "Map note color to MIDI channel"  
Patcher: crash when replacing Patcher with another Patcher  
Patcher: crash loading Patcher preset into existing Patcher while holding the shift key

Plugin Manager: "Verify" option is always on when the program is opened from FL  
Plugin Manager: scan doesn't update file date and time for plugins found in earlier scans  
Plugin Manager: some plugins are named incorrectly after a scan  
Plugin Manager: scanning FL plugins is slow  
Transistor Bass: freeze when loading from the Installed section of the plugin database  
Transistor Bass: doesn't respond to channel volume when changing preset

## 12.5 public beta 3 (28/06/2017)

### Featured changes

New: Fruity Delay 3 plugin

Updated: Fruity Balance is now a native FL plugin instead of a VST

### Changes

Disabled all formats other than .wav for quick pattern render

New macros: "Lock all playlist tracks to content" and "Unlock all playlist tracks from content"

New option to copy color from one color button to another for name dialogs that create color gradients

Render window has new options to enable or disable effects while rendering

Split children option on layer channels can now be reset easily

The mixer's default view is now "Wide"

Control Creator: drag control preset to Control Surface

Control Surface: checkbox and panel controls

Control Surface: horizontal mode for sliders

Control Surface: option to set minimum and maximum values for controls

Control Surface: option to set font height

Edison: markers are now added at the play position

Harmor: small changes to the plugin UI

### Bugfixes

Automation clips in picker panel don't update automatically when the user makes changes

Clicks in recorded audio

Ctrl+A doesn't follow the PL snap setting

Coloring and renaming pattern clips doesn't updated unselected clips in picker panel

"Current" mixer track doesn't stay docked to the middle dock site

Deleting the last pattern scrolls to the middle of the picker pattern list

Effect slot name changes when a generator preset is loaded into a mixer track

Empty pattern and channel groups aren't removed automatically

Erratic behaviour moving selected audio clips in picker panel

Error when right-clicking a picker panel item while the channel rack was detached and hidden

Exception when moving multiple audio clips in the picker panel

Items in picker panel can't be previewed by holding shift and moving the mouse over them one by one

Mini PL preview time indicator flickers

Mixer effects are not re-enabled after DWP export

Mouse wheel doesn't always work on picker panel when that is under the mouse cursor

Pattern render uses automation values from last song position

Pattern render cuts off early when the "Leave remainder" option is on

Picker panel items are kept in view when moving them

Pressing F2 after selecting an audio clip renames a random pattern

Scaling and other graphical issues in picker panel

Some keyboard shortcut alternatives (with typing keyboard on) don't work in the PL and PR (e.g. shift+B)

Smart find doesn't work in the "Current" tab of the browser

Time indicator in mini PR view is sometimes off

Various sorting issues in picker panel

Control Creator: control presets are saved with incorrectly scaled values

Control Surface: toggling editing mode re-orders controls

Control Surface: error message when setting a button's font color

Control Surface: the + button appears twice after it's been used once

DirectWave: editing samples can cause clicks during playback

DirectWave: envelope faders don't have a rail color

DirectWave: switch program option has incorrect value range  
Harmor: strange behaviour of knobs in ADV tab when they're clicked  
Maximus: scaling problems with some text  
Newtone: crash when saving a sample  
Patcher: error loading ZGE Visualizer preset  
Patcher: under some circumstances, threaded modules are not processed

## 12.5 public beta 2 (30/05/2017)

### Changes

"Add speech" option in add channel menu  
New demo project: Synth\_dfr - Overcome - Sytrus  
Touch keyboard scrolling direction reversed to make it more natural when used by touch  
Changes to auto-generated export filenames

DirectWave: improved unicode filename support  
DirectWave: renamed "Total recall" to "Monolithic mode"  
DirectWave: monolithic mode is now per instance  
FL Studio Mobile: updated to version 3.1.52

### Bugfixes

Access violation using shift + mouse wheel on patterns in picker panel  
Add generator button replaces instead of adding + other strange behaviour replacing channels  
Broken settings panel on touch keyboard if they're opened while the keyboard is still scrolling  
Can't select icon when renaming an audio clip from the picker panel  
Crash clicking on mini plugin list in mixer  
Dragging pattern and clip up or down the picker panel doesn't scroll when necessary  
Export to DWP options are inverted (for example: bypass effects)  
Export to DWP has clicks in audio  
Export to DWP exports only part of the audio in monolithic mode  
Export to DWP leads to inconsistency between sample filenames and velocity layer limits  
Fixes to deleting a pattern  
Leave remainder cuts earlier than it should  
Loading a mixer track preset in the Current track sets options that are not available on that track  
Loop recording with precount cuts previously recorded notes  
Mixer track effects can not be disabled on pattern render  
No shared data folder in browser after fresh install  
Pattern rename dialog has no title and no effect in some circumstances  
Pattern title changes color when zooming in picker panel  
Picker panel doesn't update after changing channel or pattern color  
Picker panel becomes wider after changing width and scrolling  
Potential color conflicts in picker panel  
Rearranging patterns in picker panel does not always show the drop position  
Render pattern as audio clip creates empty clip  
Sample preview stops when playback loops  
Save dialog doesn't use typed file extension properly  
Scrolling issues in picker panel  
Selecting a group in the channel rack doesn't select it on the audio / auto clip tabs of the picker panel  
Slow response in touch keyboard pads  
Text in project picker popups can be difficult to see  
Typing keyboard to piano and other keys don't work when touch keyboard is focused  
Wrong data used when selecting a channel  
Zoom of picker panel is not remembered between instances

Beepmap: bitmap isn't scaled  
Control Creator: DPI scaling issues  
Control Surface: control resizing is erratic  
DirectWave: global zone editing initially has no effect even though it seems active  
DirectWave: no popup for ADSR sliders  
DirectWave: some options do the wrong thing  
DirectWave: alignment of some popup menus

DirectWave: start region  
DirectWave: zones "slide" down when clicked on (with multiple velocity layers)  
DirectWave: program volume knob has incorrect initial value  
Edison: playback stops when adding a marker  
FPC: custom color is not reset when changing presets  
FPC: middle-click on pad should open rename/color/icon window  
Harmor: Prism mode doesn't work  
Patcher: noise on right channel after pattern render

## 12.5 public beta 1 (18/05/2017)

### Featured changes

New: clip "picker panel" in playlist  
New: "touch keyboard" window  
New: export a channel to a DirectWave preset (right-click the channel button)  
FPC: new look  
Patcher: threaded processing of modules  
Vectorized UI: DirectWave and Harmor

### Other additions and changes

Added "Hide plugin window toolbar by default" option to General settings  
Added simple color option for the FL background  
Added hi-hat icon  
Changed NewStuff to Tevlo - Release Me (Feat. VEELA)  
Improvements to aborting loading a project  
Improved project loading time  
Mixer: compact plugin list on by default  
Mixer: right-click on (empty) compact plugin list to add plugin  
Mixer: playback tracking is now set to "Mixer" by default  
Mouse wheel now works on the channel selector in the event editor window  
Ogg-encoded wave files are now loaded without the Vorbis acm codec  
Option to close all plugin windows in View menu  
Piano roll: mini overview in horizontal scrollbar  
Piano roll: Highlight root key according to scale  
Piano roll: new "Dark" keyboard view mode  
Piano roll: ctrl + mouse wheel on channel selector selects empty ones as well  
Playlist: automation clip node popups now have "Type value" entry  
Playlist: mini overview in horizontal scrollbar  
Preset selector on plugin windows now shows preset name  
Toolbars are now locked by default  
"Transparent windows" option to enable or disable transparency for inactive windows  
Vibrator plugin removed from installer (available from the Knowledgebase on the website)

Control Creator: improved look, functionality and integration  
Control Surface: options to align controls  
Edison: show selection length  
FL Studio VSTi: editor window is now scaled  
FPC: per pad automatable pitch wheel  
FPC: pads are color coded to indicate if they're empty or not  
FPC: pads can have custom color and icon  
Love Filter: added option to ignore note input  
MIDI Out: new "Note" controller type to automate sending note on and off  
Patcher: added More... option in plugin insertion menus  
Patcher: select other node to connect to when inserting plugin to node  
Patcher: load DW when dwp file is dropped  
Patcher: middle-click plugin title bar to rename  
Patcher: middle-click connection filter checkboxes to disable the two others  
Patcher: options to align modules  
Patcher: "tree display" option in Control Surface tab preset menu  
Plugin Manager: it's now possible to change the type of a verified plugin  
Plugin Manager: removed "verify shell plugins" option

Plugin Manager: Waves plugins are always combined (VST3 + VST2) when verified  
Sytrus: popup menu for Send selector  
Wrapper: option to not reset plugin when FL asks plugin to reset

#### Bugfixes

Access violation when switching a pattern while recording audio  
Close and open popups in browser, playlist headers and clips with single right-click  
Crash using Windows shell menu option  
Default value for the maximum undo level is 20 instead of 100  
Main menu bar submenu obscures main menu itself  
New project doesn't reset PL position and selected clip  
Plugin Database tab is selected when the Auto snapshot is active and the channel rack is focused  
Using up and down keys doesn't work well when the plugin picker is filtered  
Start from current position when Wait for Input is on  
Timers not released  
Typing unicode characters doesn't work in some cases

Big Clock: doesn't follow time when using Start marker  
Channel rack: steps showing after render of mixer tracks, when PR view is on  
Control Creator: visual glitches  
Control Creator: freeze when setting cap style to LEDRing  
Control Surface: resize controls from the top left instead of the middle  
DirectWave: access violation loading a program created from a Soundfont file  
DirectWave: can't type into layer velocity controls in some circumstances  
FPC: "Save entire kit as pad presets" window doesn't show destination folders  
FPC: can't open sample in editor  
MIDI Out: note color leads to incorrect channel  
MIDI Out: wrong parameter name  
Mixer: moving multiple selected sliders down and back up loses the relative values  
Newtone: kernel error in Windows XP  
Patcher: new plugin windows appear in unsuitable locations  
Patcher: can't add plugins to nested Patcher instance  
Patcher: crash when deactivating all parameter outputs on the FL input  
Patcher: improvements to dropping plugins on connections  
Patcher: .fst preset files not shown in preset selector  
Patcher: selecting modules with shift and control keys doesn't work  
Patcher: wrapped plugin window size doesn't change when opening options editor  
Patcher: plugin window title bar icons in wrong order  
Patcher: removed voice input from "From FL Studio" module in effect version  
Patcher: plugin windows show up on wrong screen  
Patcher: last tweaked parameter set on controller change  
Patcher: failure to load plugins while loading a project  
Plugin Manager: various improvements to plugin detection  
Razer Chroma: problems detecting new devices  
Slicex, Sytrus: discrepancies showing and hiding the piano keyboard  
Sytrus: OSC tab UI issue after resizing  
Transient Processor: audible artifacts when mix level is below 100%  
Vocoder: envelope follower gets stuck

#### **12.4.2 build 33** (05/03/2017)

#### **Bugfixes**

Blank export when "Wait for input" is enabled  
Crash loading Pitch Shifter plugin  
Crash rendering mixer tracks  
Demo plugins not deleted when loading song  
Template doesn't load when .fst file is loaded from command line  
Beepmap: distortion when "Grainy" option is on (64bit)  
FL Keys: doesn't load preset  
Fruity Bass Boost: doesn't initialize properly  
Wrapper: automation links are lost when bridging a plugin

**12.4.2 build 32**  
(14/03/2017)

**Additions and Changes**

Tempo Tapper mute option is now off by default

**Bugfixes**

Audio clip erased on playback after when rendered from mixer track  
Auto name channels off still changes channel name when selecting presets  
Auto name effects off causes effect slots to get no name when loading a song  
Incorrect hints for interpolation menu entries in render window  
Memory use increases when rendering mixer tracks  
Recorded audio clip plays after it should end  
Tempo Tapper has wrong help file page

**12.4.2 RC2**  
(01/03/2017)

**Additions and changes**

Added Control Creator to FL Tools menu and Control Surface popup menu

**Bugfixes**

Channel color doesn't change after selection  
Garbage text in MIDI output list  
Incorrect plugin thumbnails  
Incorrect behaviour in function to detect silence  
Control Surface: have to click multiple times to reopen popup  
FL Mobile: updated to latest version  
FL VSTi: access violation on exit in Ableton Live  
Ogun: invalid window handle error loading preset

**12.4.2 RC1**  
(24/02/2017)

**Additions and changes**

Can now use Ctrl+C to copy text from FL warning and error messages  
Saving and loading projects is now buffered (potentially faster)  
Show progress while saving project  
Tree view option for favorite plugin menus  
Patcher: added plugin favorites menu back  
Razer Chroma: support for Ornata Chroma  
ZGE Visualizer: new effect (scenes\RhodiumLiquidCarbon)

**Bugfixes**

Audio tail cutoff during playback loop  
'Auto create clip' causes empty audio clip channel when disabled  
Data corruption initializing mixer track map  
Deleting channel above playing channel messes up performance playback  
Effect slot mute/solo button position is wrong  
Error creating .ZIP file because of unicode characters in sample filename  
Error recording multiple mixer inserts into the PL with a Channel Rack filter selected  
Failure to load VST plugins  
Freeze adding step while playing  
Graphical problem dragging files with Fruity Dance loaded  
Help file crashes program  
Hyphen at start of pattern name causes it to appear as a separator in menus  
Incorrect filename if .ZIP is selected when saving a project  
Loop recorded clip added to start of loop when triggered at different position  
Maximize to all monitors doesn't use all monitors  
Menus flicker when showing submenus  
Merge similar patterns doesn't work in 64bit  
Mixer menu popup position works better  
News downloader prevents FL to start  
Note triggered from computer keyboard keeps playing when root note is changed  
Open and save dialogs updated in various places  
Playback tool doesn't stop clip when starting another one  
Plugin chosen in Plugin picker replaces Patcher channel  
Progress meter flickers during .ZIP file operations  
QuickFontCache prevents FL to start

Recorded audio is placed randomly in PL  
Riff Machine accept button is cut off  
Sample preview doesn't work  
Sampletank 2 plugin requires admin mode  
Slip tool creates gaps between clips  
Tempo undo creates additional undo item  
Toolbar menus popup below toolbar even when toolbar is at bottom  
Uninstalling FL ReWire doesn't work  
Voice count increases when looping  
Autogun: keyboard only responds partly when scaled  
Beepmap: crash loading a wide image and scrolling it  
Control Creator: crash setting smooth knob style to zero  
Dashboard: crash changing presets  
Dashboard: scaling improvements  
DirectWave: crash opening .SF2 file  
FPC: error when clicking on unused pads after .DWP import  
Fruity Bass Boost: doesn't load in 32bit  
Fruity Limiter: ceiling value crash  
Fruity X-Y-Z Controller: memory leak  
Harmor: memory leak  
Newtone: stuck warp mode icons  
Patcher: stuck notes  
Plugin Manager: Waves plugins lose individual names after rescan  
Spectroman: uses incorrect font file  
Sytrus: doesn't update some knobs when loading presets  
Sytrus: X-Y knobs snap at center values  
Vocoder: 'Freeze Envelope' can't be automated  
Wrapper: Melodyne VST3 doesn't resize  
Wrapper: sends key commands to plugin when editor is closed  
Wrapper: VST3 program change problems  
ZGE Visualizer: can't open .GIF files  
ZGE Visualizer: progress window disappears when exporting video  
ZGE Visualizer: problem with FrameBlur effect

**12.4.1**  
(15/12/2016)

**Additions and changes**

Transistor Bass: warning message when selecting "Clear"

**Bugfixes**

Crash clicking on channel rack filter combo  
DirectWave: crash after sampling VST (64bit)  
FPC: crash importing DW program (64bit)  
Patcher: crash when deleted  
Patcher: note off messages not always sent to plugins

**12.4.1 RC1**  
(08/12/2016)

**Additions and changes**

FPC can save and load pad presets again  
Keyboard focus button on title bar for Slicex, Convolver and VST plugins  
"Reset plugins on transport" is now off by default  
New "Focus selected channel on playback" in channel rack  
Transistor Bass: click and drag to draw notes/accents/slides/...  
Transistor Bass: rotate notes with shift + ctrl + arrows  
Wave Traveller is now thread safe  
Wrapper keyboard focus is now on by default  
ZGE Visualizer: added audio rate selector in export options

**Bugfixes**

Access violation recording multiple mixer inserts to PL  
Active voices increase while playing loop  
AIFF file with reverse byte order fails to load  
Automation recording in PL doesn't record when area is selected

Auto unarm doesn't work when rendering mixer tracks  
 Channel rack scrolls up when play button is pushed  
 Clip continues playback after releasing playback tool  
 Freeze on startup when samplerate is reset by the audio device  
 Maschine Jam: 8th column incorrectly stops clip  
 Menu and picker fadeout leaves visible box in Windows 7  
 Menus show up on wrong screen  
 Merge pattern clips isn't undoable  
 Overlapping audio clip plays twice  
 Rendering mixer tracks doesn't put them in project folder  
 Rendering mixer tracks uses incorrect filenames  
 Username not shown in FL title bar  
 Bass Boost: doesn't load in 32bit  
 Beepmap: only outputs on right channel  
 Beepmap: sound is different than in old versions  
 Dashboard: spin controls aren't scaled properly  
 Dashboard: spin control move speed is reset on import from text file  
 DirectWave: loop points for ogg encoded waves aren't read  
 Formula Controller: used variables are greyed out  
 Gross Beat: missing knobs in Create Sequence tool window  
 Gross Beat: step buttons in "Create sequence" tool don't draw all states correctly  
 Newtone: variation control is inverted  
 Parametric EQ 2: band selection is wrong  
 Parametric EQ 2: maximize button missing  
 Patcher: crash replacing Patcher with preset from plugin inside that Patcher instance  
 Patcher: no preset selector for Dashboard  
 Patcher: crash cycling through plugin presets  
 Patcher: double-click on Control Surface module doesn't open its editor tab  
 Patcher: notes from MIDI Out cut in DirectWave  
 Plugin Manager: doesn't save state of "Verify" checkbox  
 Razer Chroma: causes audio breakups in 32bit  
 Slicex: no undo popup menu on deck B  
 Slicex: access violation in 64bit using "Layer selections in both decks"  
 Sytrus: operator volume knob is not bipolar  
 Sytrus: won't always retrieve output buffer  
 Transient Processor: output muted after adjusting parameters  
 Transistor Bass: pan control is inverted  
 Wave Candy: visual glitch in meter mode  
 Wave Candy: OSD window doesn't scale properly  
 Wave Traveller: helper lines aren't shown  
 Wrapper: Melodo crashes when bridged  
 Wrapper: further fix for hidden VST3 plugins to respond to automation  
 Wrapper: Tls Pocket Limiter crashes when bridged  
 Wrapper: Fabfilter plugins have wrong size window when scaled  
 Wrapper: freeze with bridged SynthEdit-made plugin during keyboard input  
 Wrapper: negative mixer track offset outputs to track 103  
 Wrapper: Waves IDR360 VST3 crashes during processing  
 ZGE Visualizer: error using Peak Effects > Polar on empty layer  
 ZGE Visualizer: video export problems

**12.4**  
 (04/11/2016)

**Additions and changes**

Added FL Studio Mobile plugin  
 Rotate left/right in channel rack no longer opens the piano roll  
 Newtone: added buttons for pitch and warp modes  
 Razer Chrome: support for Naga Chroma mouse  
 Visualizer: now supports h264 video export (mp4) and FLAC audio  
 Visualizer: two new effects in new "Internal controllers" effect category  
 Visualizer: custom layer names are now used for parameter names  
 Visualizer: drag/drop to rearrange layers  
 Visualizer: support "side by side full" and "side by side half stereoscopic" modes



### **Bugfixes**

Crash when a plugin stretches samples  
Plugin window positions are incorrect when loading project at different PPI  
Stretch mode causes sample to be played at root pitch  
FPC: doesn't remember full size when editor is collapsed  
Newtone: crash when a sample is dragged to the plugin (x64)  
Newtone: sample doesn't load  
Panomatic: dB hint inaccuracy  
Patcher: fixed crash when module window is open and Patcher window isn't  
Transistor Bass: sequence changes when clicking above the area  
Visualizer: using 10k lines as html doesn't reload correctly  
Visualizer: internal controller knob settings are not persisted  
Wrapper: fixed sending VST3 automation to UI when editor is hidden

**12.3.1 (boxed)**  
(21/10/2016)

### **Additions and changes**

Don't snap recorded audio when snap is set to "Line"  
Removed "while you're rendering" panel from render window

### **Bugfixes**

No channel created after recording when "Auto create audio clips" is off  
New channel has step sequencer view instead of mini PR view after recording  
Taskbar remains hidden when FL is full screen and then minimized  
Harmless: hz/osc selectors have no effect  
Panomatic: dB hint inaccurate  
Plugin Manager: "always on top" causes problems during plugin scan  
Sytrus: alignment of FM tab and matrix is off  
Wrapper: fixed some crashes when changing fixed size buffers settings

**12.3.1 RC 3**  
(11/10/2016)

### **Additions and changes**

Maschine JAM support: added undo/redo, step seq mode and swing jogwheel mode

### **Bugfixes**

Crash when browser is moved to the left of the workspace  
Crash when Plugin Picker is opened immediately after loading a project  
Mixer track not selected when changing channel destination with "Type in value"  
DrumSynth Live: scaling issues  
Wrapper: freeze changing latency in Meldaproduction plugins

**12.3.1 RC 2**  
(07/10/2016)

### **Additions and changes**

Native Instruments Maschine JAM controller support  
New command line options to bulk render audio and convert .fsc to MIDI  
Patcher: 37 new presets by Youlean  
Transistor Bass: popup menus for bank and pattern selectors  
Wrapper: added button to refresh inputs and outputs after a change in the plugin  
Wrapper: threaded processing is now on by default  
ZGE Visualizer now publishes internal controllers  
ZGE Visualizer can now use various FL windows as textures (experimental!)  
ZGE Visualizer: 4 new presets

### **Bugfixes**

Continuous scrolling breaks performance mode  
Event playback bug when relocating song position  
No undo on automation clip paste  
No undo for "Type in value"  
Realtime stretch time mul not applied when time is zero  
Recording to playlist adds step sequencer channel even in PR mode  
Right-click on "Save as" button doesn't default to .wav file extension  
Song position can go off screen when zoomed into PR with continuous scrolling  
Control Creator: most demo knobs are invisible

Edison / Convolver / Slicex: can drag empty sample to playlist  
EQUO: glitch with hidden settings  
Beepmap: crash when moving other windows over Beepmap window  
DrumSynth Live: audio sent to incorrect tracks  
DrumSynth Live: notes aren't cut properly  
FPC: UI is a mess at 125% scaling  
Maximus and Fruity Limiter: initial latency isn't reported  
Parametric EQ2: crash when resizing  
Patcher: crash when saving  
Patcher: stack overflow error minimizing and restoring DirectWave window  
Sytrus: middle-mouse zoom on OSC scrollbar doesn't work well  
Sytrus: hot zone to edit harmonic is wrong  
Transistor Bass: auto-follow doesn't work  
Transistor Bass: "Type in value" is broken  
Transistor Bass: crash loading some demo projects  
Transistor Bass: note names don't update when loading a preset  
Vocodex: visual artifacts in env editor when scaled  
Vocodex: error closing plugin  
Wave Candy: crash with extreme audio data  
Wrapper: Waves plugins crash on close  
ZGE Visualizer: wallpaper doesn't show when plugin is hidden on project load  
ZGE Visualizer: critical error when changing presets

### 12.3.1 RC 1 (23/09/2016)

#### Additions and changes

Right-click on render toolbar button to render to MP3 instead of WAV  
Fruity Slicer: removed "Open in BeatSlicer" option  
Default bit rate for MP3 and OGG export set to 192Kbps  
Newtone: option to include regions when saving a sample in pitch correction mode

#### Bugfixes

Audio clips aren't updated when the channel's sample changes  
Automation clips play section after loop point  
Chinese characters not shown correctly  
Crash creating a new pattern after audio recording  
Freeze adding step during playback  
Markers from WavPack files aren't loaded  
MIDI notes can't go past loop recording's end point  
Mixer window moves in front of plugins after Plugin Picker but doesn't have focus  
Missing text and glyphs in FL and plugins because of incorrect font  
New plugin channel name set to "Sampler" when "Auto name channels" is off  
REX files sometimes don't load  
Slowness dragging preset from Plugin Picker  
Strange behaviour for detached windows on multi monitor setups with different DPI  
Unicode characters in track name cause error creating the recorded wave file  
Various issues related to "Host priority for keystrokes" Wrapper option  
Control Surface: knob presets don't have pause marker when they should  
Convolver, Edison & Slicex: use friendlier filename for untitled samples  
Convolver, Edison & Slicex: empty samples can be dragged to playlist  
DirectWave: crash loading .instr file  
Fruity Send: adjusting and resetting "Send to" causes louder audio  
Fruity Slicer: "Open in Edison" option doesn't work  
Slicex: right-click on save as button doesn't use .wav file extension  
Wrapper: incorrect display for sliders in interfaceless plugins (64bit)  
Wrapper: Serum crashes when loaded  
ZGE Visualizer: crash when changing presets

### 12.3.1 beta 2 (16/09/2016)

#### Additions and changes

Added .instr as recognized file extension in the sample browser  
There's now a warning when loading a project with an invalid audio output selected  
Changes to contrasting text colors in channel rack, mixer and playlist

List view mode in piano roll is now less confusing  
Renamed "saved arrangement" to "custom"  
Custom layout is now remembered even when selecting other layout  
Added new recording quantize options (right-click the Record button)  
Improved overall audio loop recording performance

### **Bugfixes**

Crash making plugin thumbnail  
Detached windows resize incorrectly on differently scaled screen  
Escape key doesn't close VST window when "host priority" wrapper option is on  
Freeze when adding step during high cpu load  
Loop recording:  
    Audio dropouts when looping back to start point during audio loop recording  
    Audio recording sometimes being shifted from the loop's start point  
    Audio recording sometimes not taking correctly latency into account  
    Automations being shifted in the pattern in some cases  
    Downbeat not being played at the next loop right after recording  
    MIDI notes sometimes being quantized to a very short length  
    MIDI notes being cut off when changing channel rack selection while recording  
    Missed downbeat during midi loop recording  
    Precount not ignoring notes in some cases  
    Recorded midi notes sometimes being shifted in the pattern  
No sound when insertion of playlist track has failed  
Piano roll zoom changes when hiding and showing the window  
Boobass: crash playing notes (64bit)  
Convolver: undo button has popup menu on left click instead of right click  
Drum Synth Live: crash playing notes (64bit)  
Gross Beat: per-tab reset button in Create Sequence tool resets all tabs  
Love Philter: doesn't remember size of hidden part of UI  
Parametric EQ2: band types and orders change too quickly  
Patcher: VFX plugins crash when playing notes (64bit)  
Slicex: missing hints for some knobs  
Wrapper: text shown behind small plugin editors

### **12.3.1 beta 1** (09/09/2016)

### **Additions and changes:**

Added Transistor Bass plugin  
Vectorized UI: FPC, Harmless, Ogun, Parametric EQ 2, SimSynth, Slicex, Vocodex  
Custom mapping formulas for controller links  
Browser: restored option to open samples in Fruity Slicer  
New "Alternative mixer highlighting" option to work with very bright or dark colors  
Dashboard can now be resized from the window border  
"Optimize for" now always defaults to multi-button mouse on install  
Plugin Manager: window can now be set to remain on top of other windows  
Improved support for command-line rendering  
Improvements to loop recording

### **Bugfixes:**

64bit related crashes in:

- Boobass
- DirectWave
- FL Slayer
- Fruity Scratcher
- Patcher
- Soundgoodizer
- VFX Key Mapper
- VFX Keyboard Splitter
- Wave Traveller

+ label in color menu isn't scaled

"Arrange windows into workspace" problem with certain monitor layouts

"Auto select linked modules" doesn't work on playlist audio clips

Black rectangle when selecting item from menu

Channel names inconstent when Auto name channels is off  
 Channel rack doesn't resize properly when FL is started  
 Corrupted audio when rendering  
 Crash closing MIDI devices (64bit)  
 Crash using "Open shell menu" in browser (64bit)  
 Drop Patcher on channel without holding shift doesn't replace the existing plugin  
 Empty filename can be added to sample history in channel settings  
 File save dialog doesn't add default file extension when necessary  
 Generic links for mixer track controls only work when plugin in first slot is focused  
 Hyphen at start of automation clip name makes it unselectable  
 Incremental scrolling doesn't work with small scrollbars  
 Incorrect alignment of mute/solo buttons in mixer plugin slots  
 "Invalid midi out handle" error (64bit)  
 Multiple selected mixer tracks can only be renamed and colored once  
 Noise when loop recording  
 Ogg Vorbis codec crashes (64bit)  
 Peaks in mixer's Current track are not aligned properly in Extra Wide mode  
 "Remove sample" in channel settings doesn't work  
 Selecting a different channel while recording will mute voices  
 "Type in value" doesn't work for interfaceless VST plugins  
 Wavpack files don't load (64bit)  
 BooBass: high cpu usage when multithreaded  
 Control Surface: color picker is transparent  
 Dashboard: scaling problems  
 Dashboard: font name garbage when exporting to text  
 Dashboard: font size saved with more precision  
 EQUO: responds to clicks below graph area  
 Fruity Slicer: stretch options are not correct  
 Fruity Vibrator: crash on close (64bit)  
 Gross Beat: scratch wheel doesn't hide in some cases  
 Maximus: missing compression indicator switch  
 Patcher: window closes when selected from Plugin Picker  
 Patcher: doesn't show message when hybrid plugin is loaded  
 Plugin Manager: some shell plugins detected as effect instead of generator  
 Plugin Manager: plugin list scrolls too fast  
 Plugin Manager: some VST3 plugins fail to scan  
 Plugin Manager: doesn't show vendor name for FL plugins  
 Plugin Manager: doesn't show plugin list  
 Plugin Manager: deletes directory junction when favorite is deselected  
 Plugin Manager: shows effect and generator favorite of plugins with same name  
 Plugin Picker: fades out when "don't distract me" is selected  
 Plugin Picker: black window when fading out and desktop composition is disabled  
 Razer Chroma: doesn't work when window is hidden or minimized  
 Sytrus: doesn't save the state of the preview keyboard  
 Sytrus: OSC harmonics hidden when zooming  
 Sytrus: OSC harmonic editor extends below the scroll bar  
 Sytrus: missing Inactive feedback when operator is in Pluck mode  
 Wrapper: VST3 plugins don't load  
 Wrapper: BreakTweaker crashes when loading project  
 Wrapper: drop preset for VST plugin on that plugin doesn't change its settings  
 Wrapper: FL doesn't receive key strokes when plugin UI is focused  
 Wrapper: can't replace one Waves plugins with another  
 ZGE Visualizer: doesn't load in Patcher

**12.3**  
 (02/08/2016)

**Additions and changes:**

Convolver now has a vector GUI  
 Razer Chroma: support for Naga Epic Chroma, Diamondback Chroma  
 Razer Chroma: updated metronome effect for Orb Weaver  
 New NewStuff demo: nucleon - Transient Processor  
 New demo project: Ephixa - Club Penguin  
 Four new demo projects for ZGE Visualizer

Three new Wiselabs Patcher presets, others updated  
Transient Processor: no more nag silence in demo mode  
Video Player: new "Delay playback by" option  
ZGE Visualizer: updated MIDI effects  
"Save acidized" render option is now disabled by default  
New option to disable menu transparency  
New menu item to load previously saved window arrangement while FL is running

**Bugfixes:**

Access violation when normalizing large audio files  
Alt+B doesn't toggle scale highlighting on and off  
Black notes not highlighted correctly  
Crash dragging MIDI from Kontakt 5 to FL  
Dragging (none) preset from picker to channel or mixer creates new preset  
Dragging (none) preset from picker to channel doesn't rename it  
Full screen mode not remembered when restarting FL  
Incremental scrolling doesn't always work  
Missing plugin dialog not shown  
Mute audio clip doesn't take effect immediately during playback  
Recorded loop doesn't show up when loop recording  
Right-click on bottom panel of piano roll doesn't work  
Underruns and high cpu usage when opening popup menus and plugin picker  
Wrong channel name when "auto name channels" is disabled  
Dashboard: font import from old projects is wrong  
EQUO: font size wrong when scaled  
HTML Notebook: doesn't find html file saved in project  
Love Philter: orange ring around led controls  
Maximus: font size wrong when scaled  
Maximus: crash moving mouse over editor window  
Plugin Manager: FL VST path is added to search path list for every installed FL  
Razer Chroma: various fixes  
Sytrus: crash on load because of invalid settings  
Transient Processor: various fixes  
Wrapper: bar start position reported to plugins is not updated every bar  
Wrapper: Nave VST3 crashes when user changes waveform  
Wrapper: Sforzando opens as 32bit plugin in FL 64bit  
ZGE Visualizer: various fixes

**12.3 beta 5**  
(28/06/2016)

**Additions and changes:**

Parametric EQ 2: added key selection for nodes  
New option to disengage the record button when recording stops  
Removed automatic "envelope" and "LFO" text on clips  
Improvements to "Align all channel editors" option  
IL Remote feedback is now always on  
New option to move all windows to visible positions  
Transient Processor: no more silence in demo mode

**Bugfixes:**

Auto-unarm displays unarmed tracks as still armed  
Can't favorite some VST3 plugins  
Channel rack: automatic resizing problems  
Error selecting multiple samples in open dialog  
Import of old tempo automation isn't always correct  
Loop recording doesn't mute recorded clips  
Love Philter steals note messages for devices locked to channels  
Multi-threaded processing off after FL installation  
Piano roll: slide and poly disappear sometimes  
Piano roll: automatic key style changes are saved over user chosen one  
Play truncated notes not active until disabled and re-enabled  
Recorded loop doesn't show up in some cases  
State of mute and sync checkboxes in tempo tapper isn't remembered

Time hint always shown when scroll lock is on  
Delay Bank: orange ring around checkboxes  
FPC: ghost image on GUI  
Granulizer: custom channel name lost on song reload  
Maximus: crash with multiple instances  
Patcher: controls don't respond to controller input when tweaked with mouse  
Razer Chroma: various bugs  
Sytrus: info text for Gasmotron preset has X and Y reversed  
Sytrus: wrong labels on chorus panel  
Transient Processor, EQUO, Maximus: font scaling issues  
Wrapper: fix for lost connection in plugin bridge is not always on  
Wrapper: crashes when parameters in bridged plugins are automated

**12.3 beta 4**  
(31/05/2016)

**Additions and changes:**

ZGE Visualizer version 2.0  
New Transient Processor plugin  
Changed name of "None" scale highlight mode to "Default"  
Remember the "custom" size of channel rack buttons when selecting a preset size  
Fruity Limiter: don't animate knobs when switching tabs and animations are off  
FL ReWire: application window is now scaled  
Razer Chroma: 4 new color presets  
Razer Chroma: support for latest Blade laptop  
New and updated presets for VGX Key Mapper, Convolver and Patcher  
New Razer Chroma demo project

**Bugfixes:**

Alt+B doesn't toggle scale highlighting on and off  
Assign free mixer track skips first insert  
Auto name option doesn't do anything when using plugin window preset buttons  
Crash dragging plugin preset from Patcher to its own channel or effect slot  
Clicking on lower part of "Current" track's dB meter doesn't select the track  
Channel rack gradient coloring doesn't work in 64bit  
Channel rack too high with maximum height resizing on  
Event data lost when swapping effect slots  
FL window's "normal" size is too big initially on scaled displays  
Gross Beat window doesn't maximize when double-clicking its caption  
Mixer track color wrong after use of "assign channel to empty mixer track"  
Piano roll and event editor don't load state of "incremental scrolling" option  
Piano roll visible but not usable after events have been turned into automation clip  
"Play truncated notes" option is active when it's off  
Toggling effect windows switches inserts when mixer is detached  
Edison: doesn't use correct file type when omitting file extension  
Control Creator: freeze when using extreme cog size for knobs  
Razer Chroma: fixes for Stealth laptop support  
Stereo Enhance: wrong hint on separation knob  
Wasp XT: velocity filter and velocity amp controls are switched  
Wrapper: Waldorf Nave plugin crashes on load  
Wrapper: can't load VST plugins from some old presets  
Wrapper: disconnected message when disabling bridge  
X-Y Controller: joystick support is disabled

**12.3 beta 3**  
(12/05/2016)

**Additions and changes:**

Razer Chroma plugin  
The names of existing channels aren't changed when dropping presets on them and the "Auto name" option is off  
"Type in value" for tempo and mixer track selectors now accepts actual values  
Fruity Limiter: comp/limiter selector is now two tabs instead  
Renamed mono brush to "Paint"  
Renamed poly brush to "Paint in drum sequencer mode"  
Reverted "Paint" brush functionality to FL10's (FL11's behavior with shift modifier)

Don't close event editor when effect slot changes  
Added size to fit option to channel rack button size menu  
In the piano roll, the shortcut keys G, H, J and K will now go to the previous or next channel. H and J go to a used channel, G and K also go to unused ones.  
Use "safe" color picker for channel gradient colors  
Scale highlights is now set to "black notes" by default  
Play truncated notes on transport is now on by default

**Bugfixes:**

Access violation when mouse hovers over the color picker window  
Access violation when moving the mouse over the playlist and piano roll  
All solo lights on MCU light up on start  
Changing from solo to alt solo in the mixer doesn't work  
Channel rack becomes sluggish when adding lots of channels  
Ctrl, Shift and Alt buttons on the toolbar can get stuck  
Master volume slider misaligned  
Most recently used colors not added to color picker when it's opened directly  
Rescan MIDI devices can stop playback in some cases  
Show scale highlights option in PR doesn't have any effect  
Size of some plugin windows increases when maximized and then normalized  
Typing keyboard layout "FPC (C4)" is not correct  
Unknown omni events in some templates  
Velocity label in PR event editor scrolls when it should stay in place  
Wrong pitch with RT stretch macro  
Big Clock: integer pointer cast (potential crash)  
Big Clock: preset arrows shouldn't be present  
Edison: changed unique name generated when dragging an unnamed sample  
Edison: "failed saving" error message in some cases  
IL Remote: mixer mute states not updating  
IL Remote: XY feedback not working  
VFX Keyboard Splitter: wrong data read from default preset  
Wrapper: effect plugins open as synths in some cases  
Wrapper: fails to locate plugins in some cases  
Wrapper: IQ-EQ plugin doesn't make sound until input is disabled and enabled again

**12.3 beta 2**  
(26/04/2016)

**Additions and changes:**

Channels are shown more prominently in the Add menu  
Incremental scrolling in playlist, piano roll and event editor  
Added macro to set all audio clips to RT stretching mode  
Playlist: ctrl+left click toggles solo  
Playlist: place recorded audio clips in first (visible) empty track  
Added shortcut to unsolo and unmute all tracks (ctrl + key above tab)  
Added "midi channel through" option  
Improvements to IL Remote feedback (also enabled by default)  
Added option to control remembering previous state when using solo  
Solo mode is auto-detected again

**Bugfixes:**

Automation clip name error  
"Auto unarm" option in mixer resets when recording to playlist starts  
Can't drag tools from bottom toolbar  
Crash clicking around in SH-1 - Perseverance song (64bit)  
Cut in channel rack cuts selection in playlist  
Browser resizes on minimize / restore  
"Make unique as sample" doesn't remember stretch mode  
Piano roll view style is messed up when switching between channels  
Plugin added from Add > Channel goes to mixer instead of Channel Rack  
Polyphony bug with realtime stretching  
Problem moving FL window after changing main screen in Windows  
Problem resizing playlist track height  
Problem with time setting with RT stretched samples and "make unique as sample"

Remember sort column for plugin list in Plugin Manager and More plugins window  
 Routing control in channel rack not updated when recording audio clip to playlist  
 Some maximized plugins don't keep minimized window position  
 Target control in event editor window is missing  
 Toggling effect windows with detached mixer switches mixer inserts  
 Various fixes to channel rack sorting  
 Various fixes to new open and save dialogs  
 Control Surface: shows incomplete control names when loading settings  
 Control Surface: not repainted properly on load  
 dB Meter: window buttons are in wrong order after maximize  
 DirectWave: name of some mod matrix entries doesn't match parameters  
 DirectWave: show specific message when loading VST plugins with wrong bit size  
 Edison: detect pitch regions crash in 64bit  
 FL Keys: typo in label  
 FPC: time slider mouse handling isn't scaled along with UI  
 Gross Beat: scaling and resizing issues  
 Patcher: parameters for plugins aren't updated when Patcher window is closed  
 Patcher: preset loads with wrong window size at 200% scaling  
 Patcher: flickering when resizing with Control Surface tab visible  
 Plugin Manager: plugin list isn't visible  
 Sytrus: resize moves text field over other panels  
 Vocodex: spin controls have ugly black borders when scaled  
 Wrapper: crash on preset change  
 Wrapper: indicates it wants midi input even when the input port is not set  
 Wrapper: plugin bridge loses connection to plugin in various situations

**12.3 beta 1**  
 (25/03/2016)

**Additions and changes:**

Real-time audio stretching  
 Lock channels to midi device (for note input)  
 Options for keyboard style in piano roll  
 Continuous scrolling in event editors  
 Plugin Manager and "More plugins" window GUI updated  
 Vector GUI for Sytrus, Fruity Limiter, Fruity Love Philter, Gross Beat, Maximus  
 Added Transient Processor plugin  
 Per-note event selector moved to editor at bottom of piano roll  
 Open and save dialogs are now more modern  
 Added "Project tempo" option to time wheel popup  
 Drag FL window from empty area of toolbar  
 IL Remote controller feedback  
 Channel rack: mute button shift+click changed to alt+click  
 Channel rack: resizeable channel buttons  
 Channel rack: option to sort channels  
 Mixer: re-arranged some controls for "current" track in wide modes  
 Rearranged Add menu contents  
 Wrapper: Presonus extensions for VST2 (high-dpi support, param context menus)  
 Wrapper: IK Multimedia plugins no longer default to using fixed size buffers

**Bugfixes:**

Access violation in browser when using left/right keys on plugin parameters  
 Black outline on pan wheel after loading NewStuff  
 Can't load mixer track presets with unicode characters in the name  
 Change color for multiple tracks changes icon if the first selected track has one  
 Change icon only works for initially selected mixer track  
 Channel rack resizes when using pattern selector  
 Channel rack won't copy and paste when detached  
 Clips don't trigger after vertical scroll in performance mode  
 Disappearing preset selectors on captionized windows  
 "Don't distract me" disables scrolling in mixer  
 FLAC export disk space is reported as 0KB  
 FLAC export freezes for 24bit files in 64bit  
 FLAC files don't have "open in editor" options in browser



Invalid event id error  
Help file doesn't open to title page  
Last node of automation clip is ignored when manually setting playlist position  
Make unique as sample doesn't work in all cases  
Maschine Mikro MK2 jog wheel doesn't work properly  
Multiple "demo" messages to click away when autosave is active and FL is demo  
No animation for internal controller selector control in "Link to controller" window  
Ogg metadata doesn't export correctly  
Overlapping clips cause playback issues  
Override generic links crash  
Override generic links doesn't work in mixer  
Pattern selection reverts on its own  
Pattern selector > Open in browser doesn't show patterns  
Plugin slot color doesn't update when loading a plugin preset  
Pressing ctrl+e in the mixer doesn't work  
Replacing plugin keeps maximized state of previous plugin  
Some FL 11 projects don't load correctly  
Step sequencer resizes when tweaking "small scrollbars" option  
Stuck note when opening popup menu  
Undo insert playlist track also undoes the action before that  
Wrong pattern painted in playlist  
Wrong activity led color after changing a channel's color  
Control Surface: control labels are wrong when loading a preset  
Control Surface: "show buttons" state not saved in presets  
Dashboard: access violation editing page names  
DirectWave: memory leak loading some soundfont banks  
EQUO: resizing one instance affects all instances  
FPC: output selector doesn't go up to 103  
Fruity Fast Dist: graphical distortion  
Fruity HTML Notebook: can't locate image file  
Fruity Soft Limiter: graphical distortion  
Fruity Squeeze: pre/post switches not working  
Fruity Squeeze: filter position disconnected  
Fruity Vibrator: doesn't follow legacy scaling option  
Newtone: snap setting not loaded correctly  
Patcher: plugin editor not closed by pressing escape key  
Patcher: processing mode isn't forwarded to plugins  
Patcher: hanging notes sending midi to plugins  
Slicex: higher up slices aren't dumped to piano roll  
Soundfont Player: output selector doesn't allow negative offsets  
Sytrus: export differences in 64bit  
Wrapper: access violation changing presets for legacy plugins in 64bit  
Wrapper: bridged plugin can't send midi to FL  
Wrapper: escape key doesn't close some VST3 plugins  
Wrapper: EZ Drummer and EZ Keys don't play along with FL when recording  
Wrapper: FabFilter plugins crash  
Wrapper: GUI distortion when minimizing some plugins  
Wrapper: FL responds to key events after plugin has used them  
Wrapper: legacy plugins sometimes show "loading" while going through presets  
Wrapper: mixer track name sometimes doesn't change when switching plugins  
Wrapper: potential freeze showing a message from a plugin  
Wrapper: real plugin name is not saved  
Wrapper: settings panel not shown correctly after captionizing plugin  
Wrapper: Slate VMR doesn't repaint properly in 64bit  
Wrapper: Auto-Tune EFX VST3 outputs mono sound

## 12.2 (15/12/2015)

### **Additions and changes:**

Vectorized UI for DrumSynth Live and X-Y Controller  
Type to piano scripts updated  
Fruity Delay Bank: right-click to solo a bank (instead of popup menu)

**Bugfixes:**

Crash when changing input  
Reverted to ogg codec to load ogg-encoded wave files  
Ogg file export crashes  
Preset selectors disappear when plugin window is captionized  
Freeze changing mixer track assignment  
DirectWave: ogg encoded wave files have clicks  
Edison: keyboard shortcuts don't work  
FPC: incorrect pad name in "Change name" window  
Fruity dB Meter: meter scale is wrong when plugin is resized  
Fruity DrumSynth Live: scales with legacy scaling option

**12.1.6 (26/11/2015)**  
(FL 12.2 beta 1)

**Additions and changes:**

FLAC file export  
Ogg files are now loaded without the vorbis acm codec  
Added direct menu items to change color and icon of channels, patterns and plugins  
Implemented Presonus "high-dpi" notification support for VST 2 and 3 plugins  
Renamed "Flat display" option in plugin menu to "Simple list"  
Manage Plugins menu item moved from Tools to Options menu  
Replaced "Jap" in score preset names with "Japanese"  
Added 3 Harmor template presets  
Vectorized UI for multiple plugins

**Bugfixes:**

Fine tempo not loading  
Arrows of track selectors aren't scaled  
Right-click outside render window cancels rendering  
Sampler paste values do not apply  
Color correction only applied to first track when multiple tracks are selected  
Stuck note when selecting active channel  
Automation clip affects song when it's not active  
Typing keyboard notes sometimes hang  
Code execution vulnerabilities when loading certain .flp files  
Crashes exporting to mp3 in 64bit  
Create sequence from env editor doesn't reset properly after a few times  
Can't open project from Windows in FL while another project is loaded in FL  
Associate FL 64bit with .flp files  
Mixer track presets include docked state  
Unicode issues when exporting to project bones  
Unicode issue with recent project menu  
Unicode issue loading mp3 files  
Unicode issue with progress when loading samples  
Unicode issue when arming a track for recording  
File settings access violation when adding a folder  
Crash when rendering to .wav file  
Empty browser snapshot  
Error when exporting project data files and project bones  
Issue when FL is on screen with different scaling than main screen  
Audio Clips stretch without Stretch selected  
3xOsc: different sound in 32bit and 64bit  
DirectWave: crash with "auto normalize samples"  
Edison: Javascript script error  
Edison: crash in "FindInDll" script in 64bit  
Edison: crash when acquiring noise profile in 64bit  
Edison: crash closing FL while Edison is recording  
Patcher: hung notes with VST plugins  
Patcher: Harmor cuts audio  
Patcher: freeze triggering notes on VFX plugins  
Slicex: tune loop crash  
Slicex: recoloring channel changes piano roll view mode  
Vocodex: noise when project is loaded

WaveShaper: no controls inside Patcher when scaled  
Wrapper: load correct version for more plugins with different names of 32bit & 64bit  
Wrapper: default "notify about rendering mode" to on for VST 3 plugins  
Wrapper: Slate VMR doesn't paint entire UI in 64bit  
Wrapper: send automation and param changes to VST 3 editors when UI is hidden

### 12.1.3 (25/08/2015)

#### **Bugfixes:**

Fixed deleting existing steps when using the 'add steps' feature  
Newtone: fixed critical error loading project settings  
Plugin Manager: fixed some plugins failing when verified  
Plugin Manager: fixed naming of Waveshell presets

### 12.1.2 (12/08/2015)

#### **Additions and changes:**

New and improved Video Player plugin  
Update main window caption when project title is edited  
Launchpad MK2 support  
Shortcut for stretch on/off in playlist is now Shift+M instead of Shift+S

#### **Bugfixes:**

Fixed cursor for slip tool - when not over a clip - from "brush" to "pen"  
Ignore search paths that have been disabled in Plugin Manager  
Cloned channels no longer cut themselves (if the original channel didn't either)  
Fixed loading generator from "more plugins" window after fast scan  
Fixed updating mixer track selectors when moving tracks  
3xOsc: fixed sound of analogue saw shape (64bit)  
Control Surface: fixed scaling of controls  
Newtone: fixed crash getting date from file  
Sytrus: fix for crash with LP2 filter  
Sytrus: fixed waveshaper sound (64bit)  
Video Player: fixed playback when FL counts down before playing

### 12.1.1 (31/07/2015) (public beta)

#### **Additions and changes:**

Notes over 120 (10th octave) now do various actions in live mode  
Removed Steinway Grand instrument  
Added new instruments: Close Grand and Stage Grand  
Renamed "flat database" to "alphabetical"  
Added FL executables that are scaled by Windows

#### **Bugfixes:**

Rename window empty for FX plugins  
Effect names too long in extra wide view in mixer  
Zipped channels cut off when resizing in mini PR view  
Added track name and/or plugin name to automation clip names  
Don't allow adding a track if there's anything on track 199 of the playlist  
Fixed resizing of step sequencer when hiding/showing mixer track selectors  
Fixed default filter in sample open dialogs  
Dashboard: removed mixer track selector in channel rack  
Delay Bank: Param reset on load  
Edison: doesn't save sample filename as unicode  
Fruity Send: fixed threading issue  
Fruity Slicer: crash when trying to use elastique  
Keyboard Splitter: velocity not correct for VST plugins  
Keyboard Splitter: removed popup from manual mapping button  
Newtone: abstract error when resizing editor  
Patcher: "midi in" plugins now receive untranslated midi data as sent by other plugin  
Patcher: pitch applied twice to VST plugins  
Patcher: pitch difference when played through Flowstone  
Patcher: can't drop channel preset  
Vocodex: crash when selecting "Machine 2" synthesizer preset

Wave Traveller: crash changing preset from preview keyboard (x64)  
Wrapper: sometimes shows editor with size of options window

**12.1.0 (16/07/2015)**  
(public beta)

**Additions and changes:**

FLAC import support  
VFX Key Splitter plugin  
Fruity X-Y-Z Controller plugin  
Added "More plugins" window back  
Launchpad Pro support  
4 high quality FPC drum kits  
Steinway piano preset for DW  
Show random (fairly recent) news item  
Periodically show different news item  
Changed various defaults  
Update reminder window  
Mixer track assignments for channels in the channel rack  
Full colorization of mixer tracks (and other visual enhancements)  
Option to delete steps instead of muting them  
Re-implemented sample history in channel settings window  
Ctrl+S saves project even when mixer has focus  
Now uses modern version of open and save windows  
Plugin Scanner is now called "Plugin Manager"  
Plugin Manager: new plugin info tab

**Bugfixes:**

Format panel in render window is open by default  
Fixed disappearing ADD > Effect menu  
Improved unicode filename support  
Fixed dropping automation clips on playlist  
Updated ogg/vorbis libraries to latest versions  
Re-implemented popup menu for LFO editor for events  
Fixed failure to unlock FL from about window  
Fixed crash editing automation (64bit)  
Fixed freeze when song reaches end of playlist (64bit)  
Changed some label colors in mixer  
Override generic links now works in mixer again  
Fixed export crash (64bit)  
Fix for hint bar not showing up when scaling is above 100%  
Fix for browser not focusing dropped item but parent folder instead  
Fix for automation presets not being droppable to the playlist  
"Delete file" menu entry won't appear anymore on "(none)" presets  
BooBass: fixed crackles  
Convolver, Dance, Harmor, Slicex: fixed truncated filenames when saving  
Edison: new preset, default recording time = 30 minutes  
Edison, Slicex: support loading and saving samples with unicode names  
Edison, Slicex, Convolver: fixed spectrum display bug  
FPC: better unicode string support (filenames mostly)  
FPC: import of DW programs tried to read unicode strings instead of ansi  
Patcher: no voice kill when FL jumps position  
Patcher: fixed sending midi cc to plugins on port that's not zero  
Wrapper: interfaceless param update doesn't update visuals  
Wrapper: fixed random interfaceless param value reset when changing them  
Wrapper: fixed "TODO 3" message  
Patcher: fixed crash dragging plugin "save preset as" to Patcher's channel button  
Patcher: fixed crash loading Patcher state

**12.0.2 (12/05/2015)**

**Additions:**

Wrapper: new option to determine what bit size to load for a plugin  
FL Studio ASIO: added "clip" option

**Bugfixes:**

Fixed crash in about window  
Fixed generic links behaviour for effect plugins  
Fixed loading 64bit plugins in FL 64bit  
Fixed jpg support in FL 64bit  
Fixed MRU color system in rename window  
Fixed Fruity Slicer preset in plugin database  
Fixed key value on export of score pdf  
Fixed event recording bug  
Fixed "item menu button" bug in 64bit  
Plugin Scanner: various bugfixes  
Control Surface: button saves/loads wrong state  
Convolver, Slicex: fixed popup menu bug  
Dashboard: fixed crash when exporting as text  
DirectWave: fixed import of 3rd party sound banks  
Download Manager: doesn't remove "downloaded" (link) folders anymore  
Edison, Slicex, Convolver: fixed noise profile doesn't work right in 64bit  
Harmor: fixed GUI glitch  
Newtone: fixed sample properties window  
Parametric EQ2: bugfix  
Patcher: fixed bug loading newtone  
Patcher: fixed missing preset arrows  
Scratcher: fixed crash on right click  
Sytrus: fixed X/Y control over other controls  
Sytrus: fixed black rectangle bug  
Wrapper: fixed problem loading wrapper options  
Wrapper: fixed crash loading MrRay73 plugin in FL 64bit  
Wrapper: fixed reset of parameters of interfaceless plugins  
Wrapper: fixed behaviour of parameters for Fruity Compressor (FL 64bit)

**12.0.1 (21/04/2015)****Additions:**

Plugin scanner combines presets for separate versions of a plugin  
FL Studio ASIO driver

**Bugfixes:**

Fixed freeze exporting NewStuff song  
Fixed crash on processors with 3DNow! support  
DrumSynth Live: fixed distortion with multiple instances  
Patcher: fixed hidden latency labels  
Plugin scanner: various fixes  
Wrapper: fixed crash with two Fruity Balance instances (64bit)  
Wrapper: fixed freeze with bridged FabFilter Pro-Q  
Wrapper: fixed crash closing detached bridged window

**12.0.0 (12/03/2015)****Additions:**

New impulse samples by SoundIron  
Updated Elastique stretching engine  
UI updates for some plugins  
Control Surface: touch support  
Control Surface: controls are freely sizeable  
Plugins are found by ID as well as by filename  
Plugin scanner: can now use custom VST search paths  
Plugin scanner: drag plugin from list to FL to open it  
Plugin scanner: add or remove favorite plugin in FL  
Plugin scanner: shows previously scanned plugin on startup

**Bugfixes:**

Crash on load in Windows XP  
Generic links issues  
Bug exporting split tracks

Various 64bit bugs  
 Control Surface: behaviour of button control  
 DrumSynth Live: sound glitch when root key is changed  
 DW: crash loading song in 64bit  
 Edison: crash in limiter script (64bit)  
 FL ReWire: several crashes  
 FPC: import from DW is faulty  
 FPC: access violation using "Save kit as presets"  
 FPC: doesn't load LudwigCS kit  
 Fruity Love Philter: freeze  
 Fruity LSD: playing notes from wrong midi port  
 Fruity Scratcher: freeze when mouse button is down and space is pressed  
 Patcher: Control Surface editor disappears  
 Patcher: knob won't move after renaming it  
 Patcher: knob disappears  
 Patcher: bugs in plugin window  
 Patcher: record automation for plugin leads to wrong values  
 Patcher: midi not sent correctly  
 Patcher: doesn't collect files from all plugins  
 Patcher: plugin exported from Flowstone freezes  
 Patcher: freeze when window is closed  
 Patcher: implemented key and mouse wheel support in plugin window  
 Patcher: update of automated parameter in Fruity Send  
 Patcher: output names for VFX Color Mapper  
 Speech synth: various fixes  
 Soundfont Player: freeze on close  
 Wrapper: plugin editors open in separate window  
 Wrapper: no sound with fixed size buffers  
 Wrapper: VST3 plugins update wrong parameters  
 Wrapper: crash opening placeholder window for bridged plugins  
 Wrapper: crash selecting presets in various NI plugins  
 Wrapper: preset change in Fruity Compressor doesn't update controls (64bit)  
 Wrapper: GrooveAgent 4 VST3 crashes  
 Wrapper: "send mod x as poly aftertouch" is now off by default

**11.5.13 (17/01/2015) Additions:**  
 More scaled plugins

**11.5.13 (07/11/2014) Additions:**  
 64bit version of FL Slayer  
 New UI for lots of plugins  
 Improved threading

**Bugfixes:**  
 Improved plugin bridge

**11.1.1 (02/09/2014) Additions:**  
 64bit version of speech engine  
 Added support for Novation Launch Control XL, Launchkey (performance)  
 Added support for Nektar Impact series

**Bugfixes:**  
 Fixed filenames of samples used by "Dance with me" project  
 Fixed crash stretching big audio clips  
 Fixed loading settings for some VST plugins (64bit)  
 DirectWave: fixed bugs exporting to FLM .instr files  
 DirectWave: fixed trigger group behaviour across programs  
 DirectWave: fixed temp folder usage when importing external formats  
 Patcher: fixed deletion of dropped files  
 Wrapper: fixed binary message data handling in VST3  
 Wrapper: fixed crash of bridged Play VST plugin  
 Wrapper: fixed volume of stereo to mono conversion

Wrapper: fix loading 32bit VST plugins  
Wave Candy: fixed crash when using some metering modes  
Wave Traveller: fixed loading settings (64bit)  
ZGameEditor Visualizer: fixed visual issue + other minor bugs  
Updated BassDrum, Drummaxx, DrumPad, Effector, GMS, Hardcore, MiniSynth, Pitcher, PoiZone, Sakura, Sawyer and Toxic Biohazard  
Updated FlowStone/SynthMaker to version 3.0.5

**11.1 x64 (14/07/2014) Additions:**

64bit version of FL and most plugins

**Bugfixes:**

Dashboard: fixed range issues for selector controls  
DW: added "Create program from samples" menu option  
FL VSTi: fixed bug sending midi events to host  
Patcher: fixed crash loading plugin when using a lot of memory  
Wrapper: plugin state is remembered even when plugin couldn't be loaded  
Wrapper: fixed stuck "ilbridge.exe" instances in Task Manager

**11.1 (25/03/2013)**

**Additions:**

MiniSynth generator plugin  
Agnivesh demo song updated  
new "Repeater" Gross Beat preset  
updated Launchpad support  
imports FLM zip files directly now  
FLM project import updated for FLM v2.4

**Bugfixes:**

fixed crash moving mixer tracks  
fixed detached window focus problem  
fixed quantize bug  
Convolver: fixed freezing bug  
DW: fixed saving of current zone / global switch  
DW: fixed dropping samples on zone list  
DW: disable "delete zones" menu item when no zones are selected  
DW: fixed loading some 20 and 24 bit samples  
Flowstone: fixed crash on right-click of "wireless" modules  
Flowstone: drag .fsm to plugin title bar to load it now works  
Flowstone: use custom path to export FL plugin now works  
Flowstone: swap links command works correctly  
Flowstone: no longer empty after reload of FL project  
Flowstone: now has midi output node in Patcher  
FPC: updated presets  
Newtone: fixed crash while playing a sample and resizing it time warp mode  
Patcher: fixed crash loading plugins  
Wrapper: fixed UI glitch loading preset with options window visible for some plugins  
Wrapper: changes to the way some editors are handled  
Wrapper: fixed CC parameter event values for a bridged plugins when loading song  
Drummaxx, GMS, PoiZone, Sakura, Sawyer, Toxic Biohazard: bugfixes and updates

**11.0.4 (25/11/2013)**

**Additions:**

Added several supported controllers  
Updated "Sacco - Goldener Schnitt.flp"  
IL Remote support  
Novation Launch Control support  
DJ TechTools Midi Fighter 3D support  
Electrix Tweaker support  
Livid CNTRL-R support  
Livid BASE support

**Bugfixes:**

Fixed creation of extra row when starting to drag main toolbar

Fixed string comparison in browser for unicode characters  
 Fixes in controller support  
 Fixed loading some data from FL Studio Mobile projects  
 Control Surface: fixed oversized sliders after saving and loading a preset or song  
 Control Surface: fixed label width when loading settings  
 DrumSynth Live: fixed saving of "auto" option  
 Edison: fixed drag/drop to FL browser  
 FPC: fixed import of newer DW programs  
 Harmor: fixed crash moving points in envelope  
 Newtone: fixed wav save bug (only 1-1.5 seconds exported)  
 Newtone: updated engine (bugfixes, works more like FL playlist)  
 Newtone: move around with arrow keys  
 Newtone: fixed bug restoring some settings  
 Patcher: fixed incorrect gui size showing plugin editors after loading old settings  
 Patcher: removed "notes" node from FL input module in effect version  
 Patcher: fixed handling of midi note on/off for effect plugins  
 Patcher: fixed next/prev preset buttons not showing for some plugins  
 Patcher: fixed loading of SimSynth in saved songs/presets  
 Patcher: fixed samplerate related problem with Synth1 presets  
 ReWired: fixed bug hiding plugin editor  
 ReWired: fix for device enumeration  
 Wave Traveller: fixed invisible editor bug the first time it's shown in Patcher  
 Wrapper: fixed keyboard input in some VST3 plugins  
 Wrapper: added context menu support for (some) VST 3.5 plugins  
 Wrapper: fixed crash with MeldaProduction MCompressor param changes (VST3)  
 Wrapper: fixed potential memory leak for VST3 plugins  
 Wrapper: improved forwarding keyboard messages from plugin to host (VST2)  
 Wrapper: fixed bug updating parameter display for interfaceless editors (VST2)

### 11.0.3 (20/08/2013)

#### **Additions:**

ReWired: added CC parameters  
 New CoolStuff demo songs:  
     "RadioactiveSandwich - Homunculus",  
     "Fuego96 - SayWhat", "Fuego96 - TimeFlies"  
 Support for Midi Fighter 3D.  
 Support for Electrix Tweaker.  
 Support for Novation Launch Control.  
 Partial support for Livid CNTRL-R.  
 Right ctrl+click on some knobs & faders for immediate jump.  
 Click&hold on note edges to snap them (or glue contiguous).  
 Touch: double-tap titlebars to maximize, double-pan titlebars to move or resize.  
 Touch: undo/redo/cut/move notes using press & tap gestures.  
 Added + one channel button to step sequencer.  
 Added support for drop of multiple audio files in playlist.  
 Updated triangle panning law not to sound louder (uncompatible).  
 New mouse wheel support to PR/PL channel/clip selectors.  
 New support for ctrl+middle mouse button zoom in PR/PL.  
 New realtime swing that applies to piano roll as well, with swing mix in channel settings.  
 New marker support in piano roll.  
 Improved selection of random notes and new selection of notes at odd step times.  
 Replaced chord tool by stamp tool in piano roll.  
 Scale levels tool now applies to velocities as well.  
 Improved tempo tapper.  
 Can now drag over the mixer button to bring up the mixer.  
 "Init song with these positions" added to multilink popup.  
 Added big control popup to control the last tweaked parameter, also in browser.  
 Ctrl+F11 to hide toolbars.  
 Optimized lists of remote controls

#### **Bugfixes:**

Fixed color change of "remove conflicts" label when linking conflicting controllers  
 Fixed "next by char" in browser



Fixed running FL as other user than the one it was installed as  
 Updated url used by "Register access to website" Help menu item  
 Re-implemented installation of ogg vorbis codec for both 32bit and 64bit  
 Small fix in event editor  
 Most templates now have 'Play truncated notes in clips' on  
 Fixed freeze changing samplerate with NI ASIO driver  
 Fixed imprecision in automation clips.  
 Harmor: fixed bug related to ribbon saturation.  
     IMPORTANT: the sound will be different now if you use ribbon saturation!  
 Wrapper: fixed access violation loading WaveShellVST in Patcher  
 Wrapper: fixed bug loading bridged plugins from FL10 as bridged  
 Fixed crash after deleting a second instance for these plugins:  
     Convolver, Granulizer, Edison, Fruity Slicer, Harmor and Slicex  
 Newtone: jump to last start position upon stop  
 Newtone: disappearing selected regions when zooming out fixed  
 Newtone: changed glue mode to ALT  
 Newtone: new Snap Downbeat command (warp mode only)  
 Newtone: lowered precision of tempo display in wave properties window  
 FPC: random trigger option is now saved in pad preset  
 FPC: fixed 'save all samples'  
 FPC: fixed plugin database preset  
 Video Player: fixed visibility of start and end handles  
 Video Player: fixed video position when starting from random position in playlist  
 ReWired, FL ReWire: fixed location that ReWire dll is loaded from  
 DrumSynth Live: fixed default patch indication in key popup menu  
 Wave Traveller: improvements in Windows XP compatibility  
 Patcher: don't show module connection popup if all items are disabled  
 Patcher: fixed label position jitter  
 Patcher: fixed loading VST3 effect plugin from favorite list  
 Patcher: fixed latency label positions  
 Patcher: fixed song position for plugins after relocating to random position  
 Control Surface: fixed import of old floating point values  
 Control Surface: fixed slider size when pasting colors  
 Control Surface: fixed control position when loading settings (mostly XY)  
 DirectWave: fixed export of 16bit int sample to FLM .instr file  
 DirectWave: fixed import of sustain loop from FLM .instr file  
 DirectWave: now sets multitimbral flag in exported FLM .instr file  
 GMS: fixed Dirty Horse TE preset  
 Drummaxx: fixed freeze at 100% when rendering

#### 11.0.2 (21/05/2013)

##### **Additions:**

Support for Livid OhmRGB.  
 Support for Behringer CMD LC-1

##### **Bugfixes:**

Fixed hint for time stretch wheel (low values)  
 Fixed slow rendering bugs  
 Fixed PPQ change bug  
 Remembers the state of the PR random tool's "patterns" checkbox  
 Fixed channel settings window showing up when loading projects  
 Patcher: fixed editor focus on double-click  
 Patcher: connection settings are now when an effect is dropped on a connection  
 Patcher: fixed request by plugin to load sample  
 DW 1.5.4: fixed import of FLM .instr files  
 Newtone: fixed passing strings with "foreign" characters to the engine  
 Newtone: fixed zooming modifiers (alt+scroll wheel)  
 Newtone: show param value popup when multiple items are selected  
 Newtone: new "Use beat marks" option for warp mode  
 Newtone: save .zpa and .zpw files to zipped loops  
 Wrapper: fixed relative knob behaviour for bridged plugins  
 Wrapper: fixed loading multiple instances of Waves VST3  
 Vocodex: fixed loading state of threaded checkbox

EQUO: fixed restoring state of Morph knob  
Drumaxx: fixed changing assigned note for pads  
BassDrum and GMS: various bug fixes  
ZGEViz: updated/added some presets  
Wave Traveller: fixed crash when loading a sample  
Updated NewStuff & Zircon-Just hold on

**11.0.1 (06/05/2013)**

**Bugfixes:**

bugfixes in pianoroll and playlist  
change to sysex for Panorama device  
Patcher: fixed bug loading old VST plugin settings  
Patcher: fixed bug adding (sub) Patcher preset with open surface tab  
Control Surface: fixed loading back links to controllers in FL  
Control Surface: fixed response to automation from other internal controller  
Control Surface: fixed reporting XY control changes to host  
Control Surface: fixed slider handle size when pasting colors  
Control Surface: fixed saving/loading XY color  
Control Surface: fixed adjusting slider properties to slider size  
fixes to Seamless songs  
Wrapper: fixed plugin bridge  
GMS: fixed various crashing bugs  
Effector: small fix  
fix to Akai APC support

**11.0 (22/04/2013)**

**Bugfixes:**

Wrapper: small bugfixes  
Fruity X-Y controller: fixed joystick names

**Additions:**

Updated Patcher  
New Control Surface plugin  
Drum pad presets added  
Updated Synthmaker/Flowstone

**10.10 (28/02/2013)**

**Bugfixes:**

Important GUI-related bugfix.  
Sending from browser to a focused attach plugin window now works.  
Little bugfix in Vocodex (when band levels are zero).  
Patcher: lots of changes and bugfixes

**Additions:**

Support for Novation Launchpad S & basic support for Launchkey.  
VFX Color Mapper plugin (Patcher only).  
VFX Key Mapper plugin (Patcher only).  
Gross Beat: Click reduction feature enhanced to 3 states.  
Improved speed of sinc interpolator.  
Synthmaker updated to Flowstone  
Newtone: added warp mode

**10.9 (12/12/2012)**

**Bugfixes:**

Lots of small and bigger fixes  
FPC: fixed threading bugs  
DirectWave: fixed garbage in sample start/end strings  
Patcher: fixed cpu usage

**Additions:**

Page Up/Down cycles through the current mixer track's plugin windows  
Support for Panorama P4 & QuNeo controllers  
Can now drop Patcher presets from browser/picker onto generators/effects to "Patcherize" them.

Double-clicking plugins in a picker called from Patcher, opens them in the caller.  
Clicking a clip once (but not moving it) now also selects it (even when not playing).

FPC: option to reset all outputs

Newtone: changed implementation of "tempo sync" checkbox

Patcher: support for VFX plugins, rewrite of "map" tab

Wrapper: load 64bit plugin if 32bit isn't installed and vice versa

## 10.8 (30/09/2012)

### **Bugfixes:**

Lots of small and bigger fixes

Fixed filter automation import from .flm file

Soundfont Player: fixed loading of soundfonts (some problems with EnsurePAnsiChar)

Wrapper: fixed sending tempo to newly loaded plugin

Synthmaker: version 2.0.11

Video Player: fixed no playback/sound in some videos (alien song.mpeg)

Video Player: now remembers window size when no video is loaded

Patcher: fixed initialization of wavetables

Patcher: fixed XY control paint bug

Patcher: fixed loading sidechain output for some plugins

Patcher: fixed updating controls from mixer thread

DirectWave: changed FLM exported category (chromatic, so the icon is correct)

DirectWave: fixed start of wave file when imported from FLM .instr filr

Downloader: fixed crash when looking for missing samples in FL

Downloader: show real download size if it's bigger than the "fake" one

Downloader: fixed freeze if you close content lib in FL while it's scanning, then click elsewhere

Downloader: fixed seeing new lists after downloading list updates

### **Additions:**

New font rasterizer

Using AGG for drawing

Patcher: experimental voice effect support

DirectWave: support for new chunk based FLM .instr file format (import)

FPC: support for new chunk based FLM .instr file format (import)

Downloader: group all items with the same download filename, not just those with a download caption

Downloader: added option to "download all" (click on subcategory/cd captions in online list)

Downloader: captions in online section are collapsible now

Downloader: content lib window is now (also) embedded in the Download Manager window

Downloader: added option to always start content lib in Download Manager (allows it to stay open)

Animation selector in general settings

## 10.6.1 (16/07/2012)

### **Bugfixes & additions:**

Bugfix in channel settings after loading channel state.

Fixed restoration of plugin detached state in some cases, & now remembers maximized plugins.

Improved GUI engine in many ways.

A lot !

## 10.6.0 (2/07/2012)

### **Bugfixes:**

**Fixed a long list of big & small bugs as well as memory leaks, in FL & plugins.**

Fixed bug in endless knob control of VST plugins.

Fixed debug log window not scrolling anymore.

Fixed crash when browser sorts by file type.

Changed font charset in numerous places, for foreign users.

Fixed little alignment error in pattern clips.

Fixed tempo-related stretching error when loading 10.5 projects.

Fixed problem with omni MIDI control linking.

Made ctrl+right click to zoom out on performance/song sections (like middle-click&hold).

Fixed little mixer menu annoyance.

Fixed small bug in PR zoom.

Workaround for Windows touch keyboard sending return twice.

Browser position restored better.  
Fixed bug in arp tool.  
Newtone: send to playlist when no wave is loaded no longer results in a file with empty name  
Patcher: fixed plugin name when dropping VST .fst preset  
Patcher: fixed crash trying to load unavailable plugin  
Patcher: fixed two crashes in effect version  
Wrapper: don't kill automation when loading presets  
Wrapper: Waves 9 x64 now shows shell plugin list  
Updated Drumaxx, PoiZone, Sawyer, Sakura and Toxic Biohazard plugins

**Additions:**

**Partial support for multi-touch monitors in FL & some plugins.**

Added warning when attempting to save inside the backup/autosave folder.  
Automation of MIDI out knobs now only destroyed when changing range.  
Added support for nankKONTROL2.  
Harmor: added import (drag&drop) for Komplexer WT wavetable files.  
Harmor: added "Map audio regions to keys" with auto-dump to score, for Slicex-like drumloop handling.  
Support for Windows "app commands".  
Plugin picker: right click to open plugin + its presets folder in the browser.  
New View->Arrange windows->Tablet.  
FL Mobile: updated file format support  
FL Mobile import now looks for instruments in shared data path too  
DirectX plugin scanning has been removed  
DirectWave: resample loop points on FLM export, improved interpolation  
Wrapper: bridge now uses FL's processing thread priority for its processing  
Added BassDrum synth plugin

**10.5.0 (13/04/2012)**

**Bugfixes:**

Fixed wrong song time displayed on Mackie CU.  
Fixed harmless glitch in multilink window.  
Fixed rare crash when reloading projects.  
Fixed bug for slots in 1-shot mode in Gross Beat.  
Fixed problem with Fruity Slicer & other hybrid plugins.  
Fixed bug in automation of automation clip's speed control.  
Fixed little bug in multipoint LFOs in synths, when LFOs have a predelay.  
Fixed many bugs related to closing FL or reloading projects.  
Fixed crashing bug in Harmless related to legato in some cases.  
Fixed minor bug in F2 picking random color in name edits.  
Fixed several browser scrolling problems.  
Harmor: fixed tiny bug in image menu.  
Gross Beat: several fixes, improved resampling & less clicking.  
Fixed little handle leak.  
Fixed rare crash when pressing ALT on some systems.  
Fixed error after recording audio in some cases.  
Dashboard: fixed crash loading an instrument file with a reference to a non-existent patch  
Dashboard: fixed double items in instrument list  
Dashboard: fixed showing & character in instrument combos  
DirectWave: fixed importing .sfz files  
DrumSynth Live: fixed pitch problem at 96KHz  
FPC: fixed freeze when changing midi loop file  
FPC: fixed crash dropping sample on a pad that's playing  
FPC: fixed cut/cut by valves in "empty" preset  
FPC: pad preset export now sets file extension (when necessary)  
FPC: fixed releasing samples when exporting a pad preset  
FPC: fixed pad preset default folders  
FPC: fixed crash opening "save entire kit as pad presets" window  
Synthmaker: various bugfixes (resizing)  
Patcher: fixed update of XY control when automated  
Patcher: fixed crash loading 2 instances and starting a new song  
Patcher: fixed hint message flicker

Patcher: fixed crash deleting Patcher instance  
Patcher: fixed freeze when deleting SF Player  
Patcher: fixed (re)size of SynthMaker UI  
Patcher: fixed use of mouse wheel over plugin UI  
ReWired: fixed time calculation  
Wrapper: fixed reset of Fruity Compressor settings after saving  
Wrapper: fixed saving settings of The Grand 3 x64  
Wrapper: various changes/fixes for bridged plugins  
Wrapper: various fixes for VST3 plugins  
Wrapper: added parameter index check for automation from VST plugins  
Wrapper: fixed loading x64 Play from song  
Wrapper: fixed some flicker in interfaceless UI  
Wrapper: fixed loading shell plugin names from registry  
Wrapper: fixed crash when dragging preset over existing wrapper that didn't have a plugin loaded  
Wrapper: fixed loading saved bridged VST3 plugin  
Wrapper: fixed crash opening and closing bridged plugin editor  
Wrapper: got rid of "no disk in drive" error message when opening plugin from saved settings  
Harmor: fixed small bug when copying bitmap.  
Fixed tiny bug when MIDI controller out port set to zero.

#### **Additions:**

##### **New performance mode.**

Little change in MIDI message delivery engine.  
Controllers: enhanced the behavior of jogs in piano roll and browser.  
Remote control: can now assign notes/buttons to parameters in several modes.  
New graphics for clips in playlist, improved graphics in piano roll.  
MIDI inputs now have a port as well, and control surfaces are now linked by port, for feedback.  
Plugins can also get & filter direct MIDI input from controllers before FL processes it.  
Links are now using MIDI ports, so no more conflict between controllers is possible, especially 2 controllers of the same type.  
Added support for APC20/40, Launchpad, Block, MASCHINE / MASCHINE MIKRO, padKONTROL controllers.  
Piano roll: brush tool changed behavior to monophonic step mode (shift for old behavior).  
Piano roll: click-&-hold resizing on 2 neighbor notes glues them.  
Some new graphics for the step sequencer.  
Ctrl+mouse wheel on channel button to change its mixer track.  
Added visual feedback for free controls on the MCU controller.  
Harmor: 2 new distortion modes.  
Harmor: tempo-synced envelopes follow tempo changes better.  
Fine tempo control merged with tempo selector.  
Improved tempo tapping, & implemented tapping for some MIDI controllers.  
Added "Chop chords" option to piano roll Strum & Articulate tools.  
Can now right click to check several menu items without closing it, in some popup menus.  
New simple playlist track folders/groups.  
Can type in names (full or partial) in plugin/project picker.  
Added type-in editor to parameter popup (formatted as absolute normalized value).  
Improved function of Home/Ctrl+Home/Alt+Home in piano roll/playlist (handy for previewing scores).  
New auto-refreshing of USB MIDI devices.  
PR/PL: hold SHIFT & CTRL to lock horizontally or vertically when moving items.  
PR: use mouse wheel while holding notes to change velocity. Also change tools while holding right click.  
Articulator tools now available to automation clips (see channel settings menu).  
Improved conversion of automation events into automation clip.  
New downloader / content library  
Dashboard: made midi reset message optional  
DirectWave: select program with midi note  
Fruity Squeeze: enabled mouse wheel for controls  
Patcher: ask confirmation when deactivating a plugin param  
Patcher: drop fxp/fxp/other files on plugin to load it  
Wrapper: linked voice slides to poly aftertouch

Wrapper: implemented loading plugin presets from various default locations  
ZGEViz: new version  
Harmor: new "Image selected column" envelope.

#### 10.0.9 (19/10/2011)

##### **Bugfixes:**

Fixed rare APDC bug.  
Harmor: fixed absolute ramp speed+high quality bug.  
Harmor: fixed bug in max height check for imported images.  
Harmor: fixed bug in image sharpening.  
Fixed playlist bug when accessing tracks over 99.  
Fixed tiny problem in envelope editor hint.

##### **Additions:**

Harmor: Mod XYZ smoothing now controls filter freq smoothing as well.

#### 10.0.8 (5/09/2011)

##### **Bugfixes:**

Fixed bug in automation of channel arpeggiator chord selector.  
Fixed rare bug in Maximus.  
Fixed bug in conversion of step seq to piano roll while playing in song mode.  
Fixed some possible problems with extended memory in plugins.  
DirectWave: Fixed bug loading some samples from FL Mobile in player mode  
DirectWave: Fixed crash loading specific .sfz files  
Wrapper: Fixed disconnecting some plugin parts when deleting VST3 plugins  
Patcher: Fixed bug increasing GDI object count  
ReWired: Fixed problem loading plugin with "smart disable"  
ZGE: Some bugfixes

##### **Additions:**

Env editor: envelope loops don't need a sustain point anymore.  
Smooth point modes now in all plugins.  
New "Song start" marker type.  
DirectWave: Import and export FL Mobile .instr files  
FPC: Export FL Mobile .instr files

#### 10.0.5 (21/06/2011)

##### **Bugfixes:**

Fixed crash when trying to automate all parameters of a plugin that has no named parameter (like Patcher).  
Slicex: Fixed bug in drum replacer tool.  
Fixed bug in loop recording (result ending at the wrong time in the playlist).  
Fixed little bug in step editing when piano roll is visible.  
Fixed Edison's "Acquire noise threshold" broken for 16bit samples.  
DirectWave: Fixed small bug with finding missing samples  
Slicex: Fixed possible case where deck B's associated file wasn't collected in zips.

##### **Additions:**

Added "Recording starts playback" option for pressing record to start playing/pressing stop to stop recording.  
New "Gap" knob in PR articulator tool, to ensure a gap between notes.  
New "Smooth" point mode in envelope editor (plugins & FL).  
Env editor: adding a point near the existing segment (with snap off) inserts that point precisely on the segment.  
Env editor: panning (middle button) also displays envelope without points (freeze).  
FL Mobile file import

#### 10.0.2 (17/05/2011)

##### **Bugfixes:**

Fixed minor bug in playlist clip preview.  
Fixed note properties not always selected when clicking on notes.  
Fixed filenames in DW presets in Patches\Packs  
DirectWave: fixed freeze when sliding notes for "bounce" looped layers  
Downloader: fixed bug finding installed path

Downloader: use correct user folder for refreshed lists  
FPC: fixed unmuting pads in some cases  
Newtone: fixed undo crash  
Patcher: fixed Y knob automation for XY controller  
Patcher: fixed crash when pasting control/param values  
Patcher: fixed update problem when pasting value for activated param  
Patcher: fixed crash when clearing  
Patcher: removed Granulizer from plugin list  
Patcher: read thumbnails from plugin database in addition to plugin thumbnail list  
Patcher: fixed unlink velocity behaviour  
Patcher: fixed sending midi pitch to VST plugins  
Patcher: fixed midi out from some plugins  
Patcher: fixed freeze using Absynth 5 x64  
Patcher: fixed SF Player freeze  
Patcher: fixed lock request from plugin  
Patcher: fixed transpose implementation  
Patcher: fixed crash in effect version when not enough audio outputs are available  
Fixed possible hang in undo when using interfaceless VST1 plugins  
Fixed wrong tempo exported in rendered projects after messing with steps per beat setting.  
FL VSTi: fixed freeze on export in Cubase

**Additions:**

Wrapper: added IAudioPresentationLatency support for VST 3 plugins  
Reversed behavior when left/right clicking on mixer arming button.

**10.0.0 (29/03/2011)**

**Bugfixes:**

Fixed problem with sidechain selectors in Vocodex.  
Fixed tiny bug in envelope filter tool.  
Fixed rendering start time problem.  
Fixed small bug on playlist loop marker deletion.  
Fixed bug when deleting playlist clips through their menu.  
Fixed bug when undoing recording of audio+piano roll when there were no notes yet.  
Fixed crash when sending presets directly to plugin window in some rare cases.  
Fixed bug in Fruity Love Philter's waveshaper.  
Fixed sample browser's hot hint minor bug.  
Fixed bug in Fruity Convolver's own smart disabling.  
Slicex & Fruity Convolver now store local filenames (avoiding searching).  
Audio clip positions now snapped to samples (better for linear interpolator).  
FL VSTi: fixed crash on close in other hosts.  
DirectWave: improved sfz import.  
Fixed bug in playlist song loop marker when piano roll pops up.  
Bugfix in Riff Machine's randomization.

**Additions:**

New project browser.  
Patcher plugin.  
ZGameEditor Visualizer plugin.

**9.9.0 (28/02/2011)**  
(public beta)

**Bugfixes:**

Fixed problem when relocating effect plugin slots.  
Fixed time signature in exported midi files.  
Edison: fixed javascript using pascal unit.  
DirectWave: fixed freeze when opening project and switch to other application.  
FL VSTi: fixed editor size reported to host.  
Newtone: fixed crash on file > new.  
Wrapper: fixed bridge timeout.  
Wrapper: endless knob support for bridged plugins.  
Wrapper: fixed crash with Slim Slow Slider's Sidechain Comp.  
Wrapper: fixed saving of settings.

**9.8.0 (11/01/2011)**  
(public beta)

**Bugfixes:**

Fixed piano roll zoom bug.  
Bugfix in Vocodex's sidechain selector.  
DirectWave: fixed "random" rename of DW channel on reload  
Newtone: reset playback position when stopping playback in FL  
Newtone: fixed crash copying notes  
Newtone: fixed clicks/pops on audio export  
Newtone: made sample loading safer  
Newtone: changed note center behaviour  
Newtone: fixed display of bars when time signature changes  
Newtone: fixed midi timing issue  
Soundfont Player: disabled threaded processing  
Wrapper: fixed buffer crash in bridged effects  
Wrapper: fixed initial i/o assignment for bridged plugins  
Wrapper: avoid division by zero errors in bridge  
Wrapper: fixed crash on exit for bridged plugins in some circumstances  
Wrapper: fixed detection of 64bit dlls  
Wrapper: other changes and fixes for bridge

**Additions:**

Alt key flips snapping instead of forcing it off.  
New "Frozen LFO" option in envelopes.  
"Multilink to controllers" 's popup now features single last tweaked parameter as well.  
Score export to PDF file.

**9.7.0 (22/11/2010)**  
(public beta)

**Bugfixes:**

Fixed crash when "Split by channel" while PR is open.  
Fixed vel mapping not updating when "resetting" it.  
Fixed broken View->Browser menu items.  
Fixed stuff related to song loop marker.  
Fixed bug in playlist's merge pattern clips.  
Fixed right-clicking on pattern selector in step seq.  
Changed behavior of right-clicking on playlist's scroller.  
Autoscrolling disabled when adding markers.  
Fixed held click on clips using pencil.  
Fixed wrong cursor when shift+add note in PR.  
Maximus: fixed bug when envelope is set to flat centered.  
Fixed 2 little browser autohide bugs.  
Fixed reset values in channel settings knobs for automation clips.  
Improved keyboard focus in FL plugins.  
Fixed sorting of channels in piano roll's list.  
Fixed case sensitivity in plugin picker key search.  
Opening a plugin doesn't keep the previous sample loaded into the channel in some cases.  
Added workaround for graphic driver bug on titlebars in some cases.  
Little bugfix in envelope editor.  
Fixed bug in PR's vertical zoom.  
Fixed APDC bug when disabling plugins.

**Additions:**

New playback/preview tool in playlist (alt+right click).  
New "New pattern" button in step seq.  
Ctrl+middle click on playlist tracks to resize them.  
New "Small scrollbars in editors" option.  
Playlist: left shift flips pencil/brush.  
Added beats to time segment options in PR/PL.  
Piano roll: (shift+)H or J cycles through filled channels.  
"Make unique" now warns if the clip is already unique in the playlist.  
Alt+click on ghost notes becomes double-right click (and still X1 button).  
Filenames stored in project files now packed using known local data paths and system ones, for better shareability.



**9.6.0 (30/09/2010)**  
(public beta)

**Bugfixes:**

Fixed bug when pressing F2/F3 in name edits without color selection.  
Fixed bug relocating in a piano roll in song mode.  
Fixed new bug in Harmless'es self-osc.  
Fixed long pause when relocating mixer tracks on dual cores.  
Wrapper: Fixed info flags bug that caused shell plugins to fail to load  
Wrapper: Removed some log entries that caused slowdowns  
Wrapper: Fixed loading/saving settings when switching to and from bridged mode  
Wrapper: Various fixes loading plugin settings  
Wrapper: Fixed crash with bridged Crystal VST  
Wrapper: Fixed loading Waves plugins from settings  
Wrapper: Support interfaceless VST3 plugins  
Wrapper: Properly set plugin name when loading a VST3 subplugin  
Wrapper: Fixed freeze in BitterSweet II  
Wrapper: Various changes in bridge to prevent freezes  
Wrapper: Hide editor windows when showing options window instead of closing them  
Wrapper: Fixed some memory leaks  
Wrapper: Fixed note velocity for VST 3 plugins  
Wrapper: Fixed locating a 64bit plugin from settings  
Downloader: Fixed crash when using prev preset function  
Downloader: Fixed installation "error [0]"  
Downloader: Fixed update of list from within plugin  
Downloader: Fixed listing user items  
Downloader: Fixed showing unrelated paths for lists that had "FL" download location  
FL Studio VSTi: Fixed "no audio" bug when loading FL VSTi from file in Studio One  
DirectWave: Fixed loading of compressed wave files  
FPC: Notify FL of changed semitone names when loading a mapping

**Additions:**

Reworked piano roll (vertical zoom).  
Mute tool now flips mute state on a whole row when used on side keyboard in piano roll.  
Pause key now pauses playback (like ctrl+space).  
Added basic support (transport controls) for Kontrolux keyboard.  
Added "remember seek time" option (right-click stop button).  
Improved deleting of overlapping notes/clips (now only deletes the top one).  
Added waveform display helper (Alt+N) to piano roll/event editor (drop sample onto them).  
Improved zooming from side keyboard in piano roll.  
Added optional more precise playback indicator in PR/PL/EE (view menu).  
Alt+click or X2 button on ghosted notes switches to the note's channel.  
Shift+wheel now moves channels, mixer tracks, playlist tracks & patterns (in step seq selector) around.  
Improved autoscrolling when moving events around.  
Song loop marker becomes song loop mode for normal markers, right click freed on time bar.  
New handle to rescale scores.  
PR's note hint now also adds key name & MIDI note #.  
Added "Assign all to->MPC/Trigger Finger/padKontrol pads" option in Slicex.  
Improved zooming/scrolling/grids in FL (no more zoom selector) & several plugins.  
Improved right-shift+click on markers in audio editors.  
Double-right click in PR now mutes (but still selects in stylus mode).  
Middle click on PR keyboard to resize it.  
New click-free "magic lasso" experimental feature (works well enough in PR, not so much in crowded PL).  
X1 mouse button on existing notes starts a selection.  
Added "Quick quantize start times" tool.  
Changed Caps Lock to allow resizing notes from left to Ctrl+Home (see Edit menu).  
Line snap=tick snap at max zoom level.  
Browser can be set to auto-hide (docked or floating).  
Fixed multithreading bug with adjacent mixer tracks routed to the same hardware outputs.  
Updated mouse cursors.  
New autobackup/autosave system (that also includes the old trash bin folder).  
"Close all windows" doesn't hide floating toolbars anymore.  
Project browser: "Automation" renamed to "Patterns", patterns in them have proper pattern

popup that allow renaming & relocating, patterns have proper colors, and extra mouse buttons move through patterns.  
 Added "Lock to most used clip" feature to playlist tracks, to mimic playlist block behavior.  
 Fixed note lengths being off by 1 tick.  
 Fixed mouse wheel bug (Delphi's fault).  
 Removed old "Main automation" named pattern from (minimal) templates.  
 Optimized size of near-empty FLPs a little.  
 Middle-clicking <> preset selector brings presets in the browser.  
 In pattern mode, single-clicking on clips jumps to patterns or channels.  
 Project browser now lists patterns that have steps in the step seq.  
 Fixed lots of mem leaks.  
 Rendering & loading progress now shows in Windows 7 taskbar button.  
 Improved channel's "assign free mixer track".  
 Fixed weird escape key problem.  
 New vertical zoom in envelope editor (shift or alt+wheel, double middle click, etc).  
 Wrapper: Can now load VST3 and 64bit plugins by dragging the .dll/.vst3 file to the wrapper  
 Wrapper: Added extra options for fixed size buffers for special cases (mostly hardware-accelerated plugins)  
 FPC: Pads can have empty names now  
 FPC: Added wheel support and level zooming for env editor  
 Fruity Envelope Controller: Added level zooming for env editor  
 Newton plugin  
 Pitcher plugin

**9.5.0 (7/07/2010)**  
 (public beta)

**Bugfixes:**

Little modification in loop recording.  
 Fixed memory leak in spectral display.  
 Harmless: little bugfix in oscillator import.  
 Maximus: fixed bug in oversampling (all times were doubled).  
 Fixed "black note=hold, white note=toggle in remote control" that was broken for lower octaves.  
 Playlist: marker relocation now undoable.  
 Fruity WaveShaper: switching to bipolar behaves better when alt curve point mode is used.  
 Fixed bug in playlist clip merging.  
 Fixed various redrawing oddities.  
 Fixed adapting automation events when changing PPQ.  
 Fixed window size bug in Slicex.  
 Fixed minor inaccuracy in automation clips timing.  
 Fixed EQ mix knob bug in Fruity Convolver when opening it from menu.  
 Fixed little drag/drop mistake in Harmless.  
 Fixed odd bug with effect sidechaining when loading specific projects.  
 Ogun: fixed tiny memory leak.  
 Fixed little bug in envelope editor open dialog.  
 Fixed rare visual bug in env editor.  
 Fixed slight loop recording problem.  
 Wrapper: fixed initial size of some VST 3 plugins  
 Wrapper: fixed mouse wheel speed for VST 3 plugins  
 Wrapper: fixed issue listing plugin i/o after a change initiated by the plugin  
 Wrapper: fixed knob mode setting for VST 2 plugins  
 Wrapper: fixed stack overflow when activating plugin  
 Wrapper: fixed potential crash while loading plugin  
 Wrapper: fixed problem for some VST 3 plugins  
 Wrapper: fixed mixing of multiple outputs to plugin track when fixed size buffers are used  
 DirectWave: fixed reliance on MS runtime dlls  
 DirectWave: fixed resizing of options dialog when fonts are scaled  
 Envelopes: fixed neverending envelopes with unconventional arp setups.

**Additions:**

Much improved "keep on disk" option.  
 Piano roll/playlist/event editor: removed "Delete all", cut/copy/delete now applies to all if no

(events and time) selection.  
Inverted behavior when resizing clips from left side with slip editing.  
Prevents early recorded notes when "wait for input" is on but "recording precount" is off.  
Improved auto placement of recorded clips in the playlist.  
Automation clips & envelope editors: left alt bypasses snap while editing, right alt (& also alt+right click) deletes points, improved step editing (post decimation).  
Improved piano roll note display (faster & looks slightly different), ghost notes now really ghosted.  
ASIO: now avoids buzzing while lots of underruns occur.  
Playlist: tracks can now be resized individually.  
F3 in name editor picks last used color.  
Added offset feature for better (less bad) DirectSound performances under Vista.  
Added new alternate playback tracking mode that doesn't rely on driver, as well as offset.  
Added option to mix directly in ASIO's bufferswitch.  
New playlist marker options.  
Playlist now showing bar #s after 999.  
Playlist/piano roll: can now display time segments other than 4 bars (View->Time segments).  
Can now relocate project in song mode from piano roll.  
Slightly less clicking when switching presets.  
Less clicking when relocating songs with audio clips (& granular effect on clips when declipping is generic or above).  
Option to move playlist marker content left & right.  
Option to play notes crossing playback start position.  
Better sorting of MRU colors in name edit.  
Improved autoscrolling for some editing features.  
Improved playlist Edit->Merge pattern clips.  
Piano roll delete/mute doesn't create undo level before actually deleting/muting.  
Manual (de)selection now creates undo level.  
Shift+up/down now works in playlist too.  
New "Merge similar pattern clips" editing feature to merge selected patterns & all their clones.  
Playlist: option to disable track grid.  
Speeded up playlist display, some new display options.  
Time markers now displayed as ticks in main song position slider + their names in its hint.  
New "copy/paste value" for envelope (& automation clips) points, compatible with parameter's "copy/paste value".  
New "duplicate" (ctrl+B) option in piano roll & playlist.  
Event ID ranges are now cached (for speed).  
Improved scrolling & optimized refreshes in PR/PL/EE.  
"Select time around selection" now selects the zoomed part when no selection.  
Activity indicators for playlist tracks.  
PR/PL: Insert now cuts events at mouse cursor position.  
New "wide tracks" mixer view.  
Added support for Cakewalk A-Series controllers.  
Added support for M-Audio Oxygen controllers.  
Left shift+resize now move splits in piano roll & playlist.  
Right shift+resize now rescales events in playlist as well (slightly differently).  
Changed "Make unique" and added "Make unique as sample" for audio clips.  
Home (begin) key now relocates to the bar that's the nearest to the beginning of the view (ctrl+home starts from zero) in PR/PL.  
Improved meters everywhere.  
Automation clips & internal controllers don't prevent using event automation for the same parameter anymore.  
Changed way channel pitch bend is automated, to allow proper use of link smoothing.  
When an automation clip is created for tempo or channel pitch bend, a default "sane" range is assigned to the clip.  
Little speedup in Fruity Limiter, Maximus, Vocodex.  
Edison/Slicex/Fruity Convolver: holding shift while dropping files appends audio to the existing data (ctrl still replaces regions).  
Markers now imported from MIDI files to the playlist.  
Little improvements in step edit mode (inserted notes are selected, can now relocate using time bar in PR).  
New waveform (peak tracking) view for mixer meters.

Added "Current clip source" list in playlist track menu (listing the clips sources used in the track).

New triple buffering ASIO mode.

Wrapper: added messages while plugin is loading and when it's failed to load

Wrapper: added 32bit bridged mode to run VST 1, 2 and 3 plugins in a separate process, to let them use more memory (not supported for DirectX plugins)

Wrapper: added support for 64bit VST 1, 2 and 3 plugins (not supported for DirectX plugins)

FPC: small changes to saving/loading

Maximus: improved crossover.

## 9.1.0 (2/02/2010)

### Bugfixes:

Fixed wrongly reported latency in Vocodex.

Fixed broken filter tool in envelope editor (in all plugins).

Fixed little bug in playlist "merge pattern clips".

Fixed crash in some rare cases when replacing & plugin that has an event being edited in a piano roll.

DirectWave: fixed loading old states saved with total recall

DirectWave: save wave files before saving the .dwp file

DirectWave: now responds to FL max polyphony value

DirectWave: no more drag and drop of foreign formats in DW Player

DirectWave: "Save program" now shows a dialog window if the filename isn't valid

DirectWave: minimize lock when loading of settings

DirectWave: update browser after saving a program or bank

Downloader: works correctly with unicode characters in filenames

FL ReWire: fixed crash when closing ProTools with FL loaded

FPC: show options menu when you click on the pad name label

FPC: selected layer is now remembered when window is hidden, shown and resized

FPC: fixed root path for loop files

Fruity Envelope Controller: small fix in envelope editor

Wrapper: adjusted pitch bend range selector

Wrapper: pitch bend range is now saved with other plugin options

Wrapper: rescan plugin properties after loading settings

Wrapper: fixed freeze with Fruity Delay

Wrapper: re-implemented loop position calculation

### Additions:

Added "realtime" flag support (useful for hardware-supported plugins).

Browser's F5/F6 (or extra mouse buttons, or ENTER or middle click) now sends to the focused plugin (or the selected channel if there's none) (handy for testing files in effects).

Edison/Slicex: original sample filename now stored in states/projects (to remember the last file loaded).

MIDI import dialog doesn't show for MIDI files with only 1 track & 1 channel.

Right-clicking piano roll's channel selector brings the channel settings and plugin editor.

Added MP3 export to Edison.

Edison (paxCompiler-powered) scripts now support Javascript & Basic.

Changed 'Select' to 'Replace' in effect plugin menu when there's already an effect loaded.

Improved tempo fitting dialog in playlist.

Edison: added "send to playlist as audio clip" shortcut button.

An empty name in the channel grouping edit now sends to the unsorted group.

Changed the method used by assisted PDC a little.

New "PDC for all tracks" helper for PDC.

Improved hovering of contiguous piano roll notes/playlist clips that are grouped or selected.

F2 in name editor cycles through random colors.

New Harmless synthesizer.

New Fruity Convolver effect.

Piano roll note color selector can show special color names for some generators.

FPC: added "Show in browser" option to loop menu

Wrapper: added button to update plugin properties

Wrapper: indicate if note message is realtime or not (VST & VST3)

Wrapper: some more speed when copying interleaved to separated buffers and back

Wrapper: store plugin filename, use it to find the plugin when loading settings

### 9.0.3 (24/11/2009)

#### **Bugfixes:**

Fixed window focus problem when dropping MIDI files onto a piano roll from an external source.

Fixed problem when creating automation clips for channel parameters in some cases.

Fixed patterns listed in inverted order in the step sequencer.

Fixed slight browser flicker in some rare case.

Fixed open dialog not defaulting to all types problem in WinXP.

Downloader: fixed showing downloader for effect plugins

Downloader: fixed update process

Synthmaker: corrected an issue with exported FL plugins where the plugin wasn't fully instantiated until the GUI was opened

Synthmaker: fixed a bug that prevented sysex from being received from an external MIDI device

#### **Additions:**

VST3 plugin support

Dashboard: added "send pitch bend range" option

Wrapper: added pitch bend range selection field

Wrapper: added support for Presonus parameter menu interface (VST3 only)

### 9.0.1 (26/10/2009)

#### **Bugfixes:**

Fixed minor bug when right-clicking mini piano roll view for immediate jump in some cases.

Fixed minor browser bug.

Kb preview now works better as notes are released when you select another channel.

Changed priority stuff when background rendering.

Fixed bug loading old projects with internal controllers in sends.

Fixed crash in Edison's scratching tool.

Fixed possible hang when using remote control with smoothing enabled.

FPC: fixed issue cutting preview voices

Wrapper: don't respond to "update display" messages during saving

Wrapper: input names were sometimes shortened

Wrapper: fixed deadlock when i/o changed

Fixed little Delphi memory leak.

Fixed crash in Fruity Stereo Shaper when both delay & phase were in use.

Wrapper: rewrote small part of DX plugin initialization

Wrapper: fixed loading old DX plugin state if plugin wasn't found

FPC: pad volume wheel resets to 100% instead of 0%

FPC: mute button now works correctly if there are multiple pads triggered by the same semitone

FPC: deleting a layer would delete two instead of one

Downloader: custom download location wasn't used in some situations

Video Player: fixed "Ignore tempo changes"

#### **Additions:**

Added 'Sidechain to this track only' option in mixer.

Added 'Create submix to' option in mixer.

Added 'Override generic link...' to knob popup menu.

Slightly improved Sytrus rendering quality.

Double-clicking a playlist track edits its mostly used clip.

Speeded up refresh of multidirectional playlist scrolling.

Wrapper: added option to disable threaded processing for a specific plugin, applies to any new instance of that plugin

FPC: added random triggering of overlapping layers

FPC: added DW program file import

DirectWave: added trigger groups

DirectWave: searches for samples in subfolder with the program's name when loading a .dwp

### 9.0.0 (10/09/2009)

#### **Bugfixes:**

Fixed dropping mixer presets onto mixer tracks failing to select the right mixer track when shown at the bottom.

Fixed crash when closing FL when playlist was shown & toolbars were detached.

Fixed undocking annoyances in the browser.

Fixed slow undocking of toolbars in Vista.

Fixed Vista blur visible when hiding Wave Candy windows.

Fixed OS error when song was running and returning from Vista's logging window or screensaver, while autoscrolling was on.

Fixed hang when opening FL's main menu while holding accelerator keys in Vista.

Fixed bug in Flangus & Flangus in Sytrus.

Added workaround for missing characters in font used to display old GUI-less VST's.

Updated timers to Vista-preferred ones.

Fixed erratic cursor visible for a short time after dragging from browser in Vista.

CPU meter no longer shows 99% when audio is temporarily suspended (was often reported as a bug).

Fixed visual bug when detaching windows in Vista.

Fixed crash when reloading projects through ALT+x shortcut, while a plugin is detached & focused.

Fixed bug in multipoint envelope processing.

Fixed crash through weird mouse click combo on the plugin preset buttons.

Fixed annoyance in browser's 'show only one folder content'.

Fixed problem when loading Maximus presets made with a specific version.

Fixed some playlist key combo weirdnesses.

Fixed not release defaulted to zero for some functions (step edit, piano roll dumps, etc).

Fixed piano roll flam tool that wasn't starting with the right settings.

Improved piano roll playback tool (can't miss tiny notes with fast mouse slides anymore).

Fixed little thing in mixer's menu.

Step edit mode: improved behavior when going backwards while holding notes.

EQUO: fixed wrong FX send track display when reloading projects.

Fixed possible hang in playlist Insert space/Delete space functions.

Wrapper: fixed chunk size loading and saving bugs

Wrapper: fixed updating the preset list for Attack when loading a Cubase preset

Wrapper: don't save parameters if plugin has chunks but returns 0 for its chunk size

Wrapper: small fix for interfaceless plugin labels

Wrapper: fixed sysex implementation

DirectWave: fixed crash when cancelling "Browse" button

DirectWave: fixed sample loading from absolute paths

DirectWave: more robust external bank import

DirectWave: avoid "no disk in drive" message when loading samples

DirectWave: small improvement to drag and drop

DirectWave: fixed event handling for hosted VST plugin

DirectWave: fixed browser update after clicking "Browse..." button

FL ReWire: now uses tick position for ppq calculations instead of sample position

Cancelling audio clip's "fit to tempo" detection dialog now cancels the fitting.

Edison: snapping to zero-crossing (improved for mono samples) now allows to select edges of sample.

Maximus: fixed display glitch for bands that are switched off.

Sytrus: mouse wheel on pitch ratio selectors now behaves better.

Edison: no more pops in sample playback when selecting.

Edison: fixed tempo set to 120 when undoing in some rare cases.

Edison: hint for tempo grid now properly follows downbeat marker.

No more problem locating project files over networks.

FPC: fixed pause point for layer pan and tune knobs

Wrapper: update interfaceless parameters in the GUI thread instead of the mixer thread

Wrapper: dropping fxb and fxp files on the title bar of the plugin window and on the step sequencer button now works

Edison: changed file-based audio undo system (standalone versions were conflicting).

Fixed playlist automation clip display bug.

Slicex: fixed little declicking glitch for specific cases.

Slicex: fixed little region-related bug when undoing.

Fixed problem with hint system in plugins.

Fixed little stretching glitch in some cases when a downbeat marker is present.

Fruity Reeverb: store parameter changes in selected program instead of the first one  
Video Player: fixed loading some settings  
Downloader: fixed crashes starting a download  
Downloader: fixed incorrect "last selected" item  
Wrapper: fixed infinite loop when an effect's inputs were inactive  
Wrapper: switched off scaling of options window  
Wrapper: send special tempo message to old FL VST plugins (mostly for Fruity Delay)  
Wrapper: prevent crash when changing parameters on interfaceless plugins  
Wrapper: initialize input buffers to zero every time (gets rid of noise in Zebra2)  
Wrapper: don't show editor window above options window when opening saved project  
Wrapper: sidechain inputs now work correctly (instead of all routed to the track of the first input)  
Wrapper: send parameter changes with float value instead of integer (fixes automation recording)  
Wrapper: midi in and out ports are remembered  
Multiband Compressor: fixed crash related to MS runtime  
Wave Candy: Auto visual mode state now properly restored, some other bugfixes.  
Slit pattern by channel now preserves pattern's beats per bar setting.  
Fixed some common window-related weirdness (windows covering others while they shouldn't, etc).  
Fixed troubles with snapping grid with specific PPQ settings.  
Fixed minor bug in envelope smoothing tool.  
Edison: fixed problem when reloading a state that had envelopes not mixed down.  
Fixed problem with FL's hint bar sometimes not refreshing when loading things.  
DirectWave: flush plugin if a sampled note didn't reach silence  
DirectWave: all zone parameters are now changed for all selected zones, when "current selection" switch is on  
DirectWave: mod reset now works for multiple selected zones  
DirectWave: fixed the way a soundfont property was counted on import  
DirectWave: overwrite existing wave files when sampling a vst (but only .wav files)  
DirectWave: make sure the samplerate is sent to the plugin before processing a vst plugin  
DirectWave: DW no longer steals keyboard focus, except for edit controls  
DirectWave: Loading a DWB file now tries to load a sample from file if it's not in the DWB  
DirectWave: DWB files now save a reference to the file instead of the sample data when total recall is off  
DirectWave: fixed acm import - sample length wasn't adjusted after conversion (was sometimes less than predicted)  
DirectWave: Fixed mouse position inaccuracy for pitch bend and mod sliders (multi tab)  
DirectWave: put critical section for sample preview slightly earlier  
Downloader: store location in global registry during installation, instead of just in local registry  
Downloader: fixed some crashes when the downloader couldn't find the download dll  
Downloader: selection window now has minimum size  
Downloader: fixed bug that caused downloads to start again after being finished  
Downloader: fixed download location calculation in manager  
Wrapper: Ampersand was shown as a shortcut underline in the options window (info section)  
Wrapper: fixed a bug loading Arturia AnalogFactory settings  
Wrapper: midi port changes after a plugin was dragged didn't make the wrapper ask the host to enable midi input  
Wrapper: Added code to load shell plugins from different filename than when they were saved  
Wrapper: use different way to determine if a plugin is VST1 or not  
Wrapper: removed first check for value of FruityPlug in UpdateSize to make sure editor size is updated when loading the plugin fails  
Wrapper: don't get parameter labels and value for shell plugin (waveshell) to prevent crash  
Wrapper: fixed buffer (effect version) now doesn't zero output buffer and takes into account plugins without inputs  
Wrapper: fixed assumption that an effect would have inputs  
Wrapper: "onlysavefirstprogram" workaround for Blood Overdrive and Compressor is now used for all VST1 plugins  
FL Keys: high notes are now always decayed on release, instead of released immediately  
Fixed minor automation bug in Slicex.  
Fixed minor graphical mistake in mixer skin.  
Up/down controls should now have no more problem with multiple monitors of different sizes.

Downloader: fixed prev preset selection  
Downloader: fixed focus bug related to modal content selector  
Downloader: fixed bug executing items after download, wrong list was used  
Downloader: paused downloads are now added at the top of the list  
Downloader: tree will refresh less frequently  
Downloader: now deletes all relevant .info files when removing waiting or finished downloads;  
tp get rid of multiples  
Downloader: tree won't jump back to top when refreshing in response to finished download  
DirectWave: made sure soundfonts load even though a (previously mandatory) chunk is  
missing  
DirectWave: added support for 24bit and 32bit aiff files  
DirectWave: fixed loading soundfonts with multiple banks/presets when those were resorted  
DirectWave: continue to load soundfont even if it doesn't have the "isng" chunk  
Wasp XT: fixed graphical glitch in slider button  
Wasp XT: parameters past unison had the wrong index when sent to the engine  
Wrapper: calculate new sample position when plugin is processed, instead of when wrapper is  
processed  
Wrapper: decreased max value of interfaceless wheels to prevent weird behaviour  
Fixed memory leak in browser.  
FL Studio ReWire: fixed bus enumeration bug  
Wasp, Wasp XT: fixes related to parameter handling  
Wrapper: Check if current program index is valid when loading  
Wrapper: Check if the current program index is valid when saving  
DirectWave: can hear hosted VST plugin again (to preview sound)  
DirectWave: 440Hz tone works again in FL version  
FPC: some gui tweaks  
FPC: assign entire font instead of just color and style in SetComponentProps  
FPC: selected layer is no longer reset when resetting an automatable param  
Downloader: files would keep coming back if deleted with right-click  
DirectWave: fixed loading (not loading) settings in player and demo mode for FL version  
DirectWave: fixed product code communication in FL version  
Wrapper: note on/off messages to DX plugins now work again  
Wrapper: don't show hints for parameter changes while a parameter is being changed from  
the host  
Wrapper: inputs and outputs were set to inactive for old settings

**Additions:**

Wave Candy: added rounded corners size selector, made Vista blur look better, made preset  
switching faster.  
Improved multithreaded generator performances.  
Improved audio performances in Windows Vista.  
No one really asked, but auto scrolling state is now saved & restored.  
Updated compiler (D2007), drag&drop component, IPP library to latest versions.  
Added Janko layout to typing-to-piano keyboard option.  
Maximus now significantly faster.  
Plugin picker: thumbnail hint now shows all of the plugin's categories (also selected through  
arrows or mouse wheel), + other improvements.  
Added multithreaded mixer tracks processing, and moved CPU settings to the audio panel.  
Added global smart disable checkbox & new aligned tick lengths checkbox.  
New debug log in settings window.  
Can now double-click on effects in plugin picker.  
Added multithreading to effects processing.  
Can now drop effect presets onto mixer tracks & channels, mixer track presets onto effect  
slots and channels, channel & generator presets onto mixer tracks & effect slots.  
Shift+F8 now brings plugin database.  
Automation and Humanizing presets folders relocated to the Scores folder.  
Can now drop automation FSC's onto piano roll (when a controller is selected).  
Added access to Windows file shell menu from browser item menu.  
Added new browser folder icons & new 'Recent files' browser folder.  
Added starting & (approximate) working time information in project info window.  
Controls (in FL & FL plugins) now properly support Vista's window rescaling (font size).  
FL now accepts file drops in copy, move & link modes.



Alt+drag from browser = force drag in 'link' mode.  
Edison now drags files in move mode, to avoid extra temporary files (when dragging from an Edison/Slicex/Sytrus to another, or between Slicex decks).  
Dropping file onto the 'Open audio editor' shortcut button now opens it in a new audio editor.  
Dropping file in 'move' mode (e.g. from Edison/Slicex/Sytrus) onto browser moves file to browser folder it's dropped on.  
Wave Candy now behaves better when 'Stay on top' & 'On desktop' are off: both off = normal floating window, Stay on top on / On desktop off = will be hidden when popup dialogs appear.  
Added scrollbar for zooming to Fruity Envelope Controller in key & vel mapping modes.  
New browser 'Sort by -> Group' option to put most important folders on top (sort group in .nfo files).  
Song info window now shows up while loading project.  
New (optional) big hint bar, showing progress more clearly when loading projects or processing lengthy stuff.  
Edison/Slicex: new 'Export regions->For sampler use...' that exports with marker middle notes, and improved export.  
Improved envelope point decimation (used in automation-to-automation clip & Sytrus/Ogun).  
Can now drop audio files onto most envelope editors (does same as audio analysis).  
Playlist now sticks to right edge when browser is resized.  
'Close all windows' now closes detached windows too, and added 'Close all unfocused windows' option, to keep the focused one open.  
Missing plugin warning (now only once per plugin type) now the same for wrapped VST's.  
Added browser hovering helper for too large items.  
Envelope step editing now works with snap off, with point decimation.  
Edison can now be maximized (double-click titlebar or press enter).  
Added level scaling & point decimation tools to envelope editor (in plugins).  
Shift+mouse wheel to quickly zoom browser.  
Extended browser extra search folders to 30 entries.  
New (fortunately optional) project data folder setting.  
Fruity WaveShaper: gutter is now clickable.  
Playlist Edit->Insert / Delete space now cuts through playlist clips.  
Plugin picker now features categories.  
Enlarged playlist & piano roll time bar, playlist panels are not swappable anymore.  
Piano roll / playlist local menu (F3 or extra mouse button 2) now lists editing modes.  
FL's audio displays now show proper region purpose colors.  
Playlist: extra mouse button brings clip source selection popup.  
Fixed (I think) infamous invalid playlist clips bug.  
Added random color option for patterns, made playlist clip focus selector update along with default item.  
Added useful colors menu to name edit dialog (right-click color button for random color).  
Audio clips are auto-colored when dropped (& playlist track is auto-colored when clip is dropped on it).  
Added 'Select by selected source' in playlist, to select clips of patterns or channels that are selected.  
Brand new playlist track naming & tools for better song organization.  
Mixer icons now available to channels (& playlist tracks).  
New playlist 'behind clips' modes (& old bevelled mode is gone).  
Playlist auto-focuses clip type when current clip source changes.  
Improved playlist clips display at small sizes.  
Added 'Deselect' & handy 'Select time around selection' option.  
Added a couple of new mixer icons.  
Improved 'Best fit' & 'On selection' zoom presets (will zoom on selected items if no time selection exists).  
Improved note & clip deletion (won't miss events when rapidly deleting) & fixed little bug in note deletion from note properties.  
Added note & clip muting.  
Improved note & clip moving/resizing detection.  
Added note & playlist clip grouping (works on selecting, moving, resizing, deletion, muting, shifting using mouse wheel).  
Recorded audio clips in loop recording mode are now muted, instead of the associated channel.  
Added 'group notes' option to piano roll chop, arp & flam tools.

Improved vertical scrollings in event editor / piano roll / playlist.  
Middle click now works as panning & works vertically as well in piano roll / playlist, and made it work in event editor as well. Shift+middle click or shift+right click works as old (inverted) bidirectional scrolling.  
Alt+mouse wheel on playlist now vertically zooms in-place (like ctrl+wheel on time).  
Added support for Korg nanoKEY, nanoPAD & nanoKONTROL controllers.  
Added button for portamento (just like for slide) to piano roll.  
Piano roll / playlist: right alt + right click to quick quantize a single note / clip start position, end position, or both (works in slip edit mode too).  
Piano roll / playlist brush mode now works better for note / clip lengths that aren't quantized.  
Improved Edison's resampling (for even better prefilter transition).  
Added 'Only with selection' & random seed options to PR articulate tool.  
Added 'Center' knob to piano roll / event editor level scaling tool.  
FL built-in tempo detector changed to alternate (constant tempo) one.  
Edison: new Regions->Detect beats option.  
Edison / Sytrus / others: added new envelope point modes.  
'Make unique' on automation clips now copies (preserves) the link to the control(s).  
Right-clicking the piano roll 'select' button brings the select menu.  
Ctrl+Shift+right click in playlist zooms on a single clip (handy to edit automation clips).  
Improved oversampling quality & speed (Sytrus, Fruity WaveShaper, etc).  
Groove quantizer: can now delete notes too (by just setting velocity to 0 in templates).  
New 'Riff machine' piano-roll tool (see Tools in main menu as well) to create riffs by blending various templates & settings.  
Sytrus: added new 'improved', 'even' & 'blurred' unison distribution modes (see options menu).  
MIDI input messages are now logged (only when log window is visible).  
Number of insert tracks upgraded to 99, for a total of 105 mixer tracks.  
Slicex: right-clicking slice output selector now brings a popup listing mixer track names.  
New Fruity Stereo Shaper plugin (for stereo splitting and effects).  
Edison: new 'Lossy normalize' option to maximize short samples without audible loss.  
Edison: setting sample to tempo-synced defaults the tempo (if not set yet) to the one of the host.  
Audio files recorded from FL's mixer now embed tempo information (the tempo at the time of recording, for audio clip's 'Fit to tempo' to work without having to guess the tempo).  
Last tweaked parameter menu moved from plugins to FL's Tools menu.  
New 'Tools->Last tweaked->Override volatile link...' to set up a MIDI knob that always controls the last tweaked parameter.  
Multilink to controller's LED popup now applies to the last 2 tweaked params if the list is empty.  
Wave Candy / Fruity Dance: anim window popup now features 'View settings' to bring up the actual plugin editor.  
Fruity Dance can load user sprite sheets.  
New 'Claw machine' score tool in piano roll (works well along with Slicex).  
Edison: right shift + mouse for tempo fine tuning.  
PR/PL/EE, and Edison/envelope editors: new autoscrolling when hitting edges while editing.  
PR/PL: new "snap to other events" mode (also works with ghosted notes).  
Event editor can now be aware of which plugin parameters appear 'centered' (supported by Sytrus so far).  
Some menu items (save plugin preset & score) can now be dragged around (like browser files).  
Added option to invert piano roll grid colors (for improved readability).  
Wave Candy: added new metering modes for loudness visualization, and new vectorscope visualization, also mouse X1/X2 buttons switch mode.  
Can now drop channel data (samples, etc) onto piano roll (more intuitive for Slicex).  
Holding ALT while SHIFT-rescaling piano roll scores snaps rescaling ratio to 25%.  
Missing project samples now located first in project folder, then only in last folder where previous missing data was found.  
Loading a project with missing samples now asks for the content downloader to locate them.  
Right-clicking the 'enable effect slots' mixer buttons now shows or hides editors of all plugins for that track.  
Fixed little Slicex resizing glitch.  
Slicex: improved realtime & offline in/out declipping.  
Incoming MIDI notes now have their MIDI channel mapped to the corresponding selected

channel in FL (MIDI channel 1 controls first selected channel, MIDI channel 2 controls second selected channel, etc).

Edison: added new spectrum display gradients.

Audio clips (& sampler channels): added various declipping modes in channel settings window.

Envelope editor: improved tools.

Ogun: new Create pad harmonics tool.

Newbie enhancement: 'Start on input' feature is not saved/restored anymore.

Can now export a piano roll to a MIDI file (notes only).

Dropping audio clips onto playlist aligns them properly according to the downbeat marker (if present).

FruityLoops Edition users who have purchased Edison VST can now use the FL version in FL.

Updated to LAME 3.98.2.

Improved playlist mouse wheel scrolling.

Right-clicking the playlist clip focus button brings a list of either audio, automation or pattern clip sources.

Improved "split mixer tracks" rendering filename management.

Edison: new "natural weighting" & improved "natural scale" for better spectral display, as well as new (slow) high quality mode that brings both time & frequency accuracy (especially in natural scale mode).

PEQ2, Wave Candy & FL now use natural weighting for their spectral display.

Added note helping lines in piano roll when notes are played.

Improve envelope editor's envelope smoothing tool & decimation tool.

New envelope filter tool in envelope editor.

Wave Candy: improved scale feature, and added piano kb helper to spectral display.

Fruity Reeverb 2: added option to process side.

Improved mixer's input "automap" feature (doesn't map mono inputs, and doesn't route them to master to avoid feedback).

Updated scripting engine used by Edison scripts (should allow VB scripts now).

Updated score logger to work better with tempo changes (works a little differently now).

Can now delete playlist clips from their menu (handy for overlapping clips).

Added note preview when changing velocity (or other properties) in piano roll using ALT+mouse wheel on nearest note.

Edison: improved loop tuner (new tension feature).

Change: audio tracks are no longer set to "cut themselves".

Slicex: new attempt at auto-naming regions (only kick, snare & hi-hat for now).

Removed RBS file import (not much useful anymore).

Added option to open Fruity LSD in MIDI import dialog.

Added support for sample preview in browser & plugin picker using NFO files using "Preview=SampleFileName".

Browser now lists DWB files.

Edison can now export to OGG files.

'Waiting for input' feature now 600% noob-proofed.

Support for WavPack files in FL, Edison & Slicex, preserving original WAV info.

Plugin picker now answers to alphanumeric keys.

Added glow/shadow border option to Wave Candy.

Speed up in sinc interpolator.

Wrapper: added option to steal keyboard focus from the plugin

Wrapper: adapted to new drag and drop implementation

Wrapper: buffers are now aligned better

Wrapper: adapted effect version to be threadable

Wrapper: added "Record parameter changes" option

Wrapper: added options screen to replace options menu

Wrapper: implemented multiple inputs and outputs for effects

Wrapper: multiple inputs and outputs now works with the "Use fixed size buffers" option

Wrapper: can now load new "shell" plugins (WaveShell v5 and newer, mostly)

Wrapper: minimize locked time when loading a plugin

Wrapper: re-implemented saving and loading of settings to be more future proof

Wrapper: optimized most buffer operations (copy/add/interlace/deinterlace)

Wrapper: new look for interfaceless editor

Wrapper: now loads VST 1 and DX plugins automatically, instead of FL's internal host

Wrapper: fixes to save/load settings for Fruity Compressor and Fruity Blood Overdrive

Dashboard: send controller values on playback start  
Fruity Squeeze: adapted to be threadeable  
Fruity Multiband Compressor: adapted to be threadeable  
Fruity Scratcher: adapted to be threadeable  
Fruity Video Player: adapted to be threadeable  
FL Studio VSTi: added tray icon to easily show/hide FL window  
FPC: pad now triggers different velocity depending on vertical position of the mouse cursor  
FPC: added "Show GM note names" option to show/hide names in the note selection menu  
FPC: adapted to new drag and drop implementation  
FPC: added popup menu with mixer track names to output selector  
DirectWave: increased maximum polyphony from 64 to 512 voices  
DirectWave: added browser preview volume control  
DirectWave: added home button in browser  
DirectWave: browser paths are shortened when they're inside the content library folder  
DirectWave: added option to copy imported dwp and its samples to the content library folder  
DirectWave: re-arranged options window  
DirectWave: new import dll  
Downloader: bring selection window to front when it's opened again (from FL's news toolbar or from plugin)  
Video Player: load video when file is dropped on title bar or step sequencer button  
Wrapper: load VST plugin when dll file is dropped on title bar or step sequencer button  
DirectWave: added control to set maximum release time for sampled notes  
DirectWave: implemented new downloader interface, modeless  
DirectWave: click on empty area in scrollbar(s) to go to that position  
DirectWave: Updated CT dll  
DirectWave: Reduced max polyphony to 256 to reduce cpu usage when idle  
Downloader: cache results of product code registration check to speed it up a bit  
Downloader: implemented ilreg system  
Downloader: improved filter speed  
Downloader: only filter when filter text is at least 3 characters  
Downloader: Implemented delete, move up and move down for items in manager's list  
Downloader: ToxicBio, Sawyer and Morphine downloads can now also be downloaded from the selector (if the plugin is installed!)  
Downloader: improved "last view" behaviour a little bit  
Wrapper: now reports the sound device's i/o latency to the plugin  
FPC: layer shows newly added item (i.e. scrolls to it)  
Downloader: added buy button  
Downloader: Changed status bar message for failed downloads, when the user is boxed  
Downloader: option to load regcode from file now also works in Windows  
Downloader: added "download regcode" menu item in manager  
Downloader: added possibility for web link items  
Downloader: double-clicking a failed item will go to the registration page (boxed) or retrieve regcode page (online users)  
Downloader: changed text for boxed registration popup menu item  
DirectWave: added "copy to all zones" options for a number of zone properties  
FPC: added some more locks when creating layers  
FPC: new skin, some more changes  
FPC: added possibility to "spread even" on a logarithmic scale  
FPC: locking layers doesn't automatically spread them even anymore  
FPC: now remembers the midi loop name when preset/file is loaded back  
Wrapper: cleaned up error message when DX plugin isn't found  
Diagnostic: changed "fruity fonts" font to "tahoma"  
Wasp: decided on a volume log scale to get the new Wasp engine as close to the old one as possible  
Downloader: changed buy and info links  
Downloader: use image-line.com for redirect link instead of flstudio.com  
DirectWave: implemented ilreg protection  
DirectWave: added wavpack support  
Downloader: set on top if modal  
FPC: implemented .padpreset loading in FPD\_LoadFile  
Wrapper: added "Reset plugin" button to Info page of Options window

**New plugins:**

Ogun: synthesizer specialized in metallic timbres.  
Gross Beat: beat rearranger effect.  
New Autogun synthesizer based on Ogun.  
Vocodex: vocoder effect.

**Implemented & removed:**

Right-clicking playlist items no longer deletes them (hold halt to do so). (thrown, user complaints)  
Can now middle-click working area to "pan" plugin windows (ONLY plugins, as it's designed for oversized VST's). (thrown, too many annoyances)

**8.0.2 (05/06/2008)****Bugfixes:**

Fixed rare crash when loading new project while playlist is visible.

**Additions:**

Added preview to Edison & Slicex tools.  
Added knob for note release in step sequencer & piano roll randomizer tool.  
Implemented new audio clipboard format to counter Windows'es inability to handle long bits of audio.

**DirectWave:**

Fixed vst rendering if a plugin reports zero programs  
Fixed window resize (window kept getting bigger)  
Fixed memory leak when loading external banks  
Create Temp folder before import of external banks  
Browser is refreshed when the lib path changes  
Fixed crash when importing samples with long filenames (longer than 31 characters)  
Fixed a mouse capture issue  
Fixed bug exporting waves for VSTi programs that start or end with spaces  
Fixed some small visual glitches  
Fixed filename extension extraction bug  
Increased browser button size  
Removed mouse wheel velocity sensitivity  
Added tablet pc / stylus option for controls

**FPC:**

Fixed crash when sample is used normal and reversed  
Doesn't load the midi loop into the pianoroll anymore when changing preset

**Fruity Wrapper:**

Fixed glitch when changing "bottom toolbar" setting  
"Send pitch bend range" is now off by default  
Fixed buffer size communication bug on plugin initialization

**8.0.1 (21/04/2008)****Bugfixes:**

Added missing folders in the Patches folder.  
Fixed hints on renderer's bit depth selector.  
Fixed misaligned browser thumbnails when file extensions are shown.  
Fixed very rare browser bug.  
Fixed bug in multipoint envelope release when release time was zero.  
Fixed little Slicex bug.  
FPC: doesn't load the midi loop into the pianoroll anymore when changing preset.  
Wrapper: fixed bottom toolbar behaviour.  
Wrapper: "Send pitch bend range" is now off by default.  
Wrapper: fixed buffer size in some cases.

**Additions:**

Right-clicking browser button now brings plugin picker.  
Made Edison & Slicex load associated ZGR files.

Gave ZGR files less priority than built-in WAV slicing information.

**8.0.0 (09/02/2008)**  
**10 years**

**Additions:**

**anniversary!** New **Slicex** drumloop slicing generator plugin.  
New **SynthMaker** modular environment.  
FL finally supports MIDI SysEx input, and handles basic MMC functions.  
Added error message at startup when MMX or SSE1 is not found.  
Cleartype not forced anymore for mixer labels for Win9X platforms.  
Right-clicking splitters (browser, piano roll, playlist) for spare position.  
Project browser: can show/hide plugin editors from the generators/effects folders.  
Generator smart disable is now compatible with threaded rendering.  
Added mouse wheel support to popup menus & combo selectors.  
Added some extra mouse buttons support.  
Added (manual) plugin editor thumbnails to project browser.  
Sinc interpolator now faster (64point sinc now usable realtime).  
New slope modes for LP/HP/LS/Peak/HS bands in Parametric EQ 2 plugin.  
**New 'multilink' option for quicker remote control assignment, creation of multiple automation clips, etc.**  
Added 'Edit whole mapping' to Remote control part of the project browser.  
Optional stereo waveform display in playlist.  
Re-implemented CME UF keyboard support (although MIDI feedback sometimes makes no sense).  
Parameter smoothing now works for relative knobs or other incremental MIDI controls too.  
Improved parameter smoothing.  
Can now define absolute increment steps in MIDI remote control window.  
Playlist->Edit->Shift left/right now works for audio clips too (including using control surface jogs).  
Added full support for the Mackie Control Universal.  
Improved support for some controllers.  
Improved 'undo knob tweaks' to support tweaking several parameters at once without slowing down.  
Love Philter: piano keys assigned to patterns.  
Tweaking controls on VST(i)s now show a hint message in FL's hint bar (when possible).  
Wave Candy: fixed some bugs & added Vista window background blur.  
Updated to LAME 3.97.  
Improved latency compensation 'Set from' option.  
Rendering with latency compensation.  
Added slip editing in playlist clips, as well as little changes in resizing tools.  
Improved accuracy of MIDI input recording under high GUI CPU load.  
Can now move effect slots around using the mouse wheel.  
FL (& some FL plugins) now support .ogg format.  
**Introducing 'Selected' mixer track, to which the selected mixer track is routed, and in which you place visual effects or a recording Edison.**  
Ctrl+E to quickly open an audio editor in a mixer track, or Shift+E to open an audio logger.  
Added score logging feature, not to miss scored played while testing.  
Piano roll: added 'Select at random' to select 10% random notes, for variations.  
Playlist: clip source selection now in titlebar, and clips panel now on top by default.  
One-click audio recording now prompts to record in Edison.  
Improved RAM usage meter for some systems.  
Can now resize multiple playlist clips at once.  
Caps lock function changed to allow resizing of notes from left side in piano roll.  
Added recording filter (right-click record button).  
Newbie enhancement: snapping is on by default.  
Newbie enhancement: browser snapshot now defaults to slot 1.  
Newbie enhancement: window menu icons replaced by holly down arrows.  
New spectral view in monitor panel.  
DrumSynth: added call to SendPatchToEngine to Voice\_Release, to temporarily fix a release problem when multiple voices are active  
Automation now displayed in pattern clips, improved event editor display.  
Channels in piano roll channel selector are now sorted by channel group.  
New list of available patterns when right-clicking the pattern selector.

Patterns named '-pattern name' now act as separators in lists.  
Added OGG Vorbis rendering target.  
Added randomize & humanize to multilink menu.  
Default audio device changed to ASIO4ALL.  
Newly-recorded patterns now added as pattern clips (when in song mode).  
Fruity DX10: mod init and sustain calculations now also take samplerate into account  
Changed piano roll keyboard modifiers a little (see help file) to add a new SHIFT+click to add note in resize mode.  
Added 'Send previous/next to selected channel' option in browser. Works well with extra mouse buttons too.  
Default peak meters scale bottom changed to -70dB, alternate scale down to -50dB.  
Introducing FL-chan in wallpapers.  
Newbie enhancement: 'save as' icon blinks once 5min after the last save, then each 30sec after 10min.  
Changed generator multithreaded processing method a little.  
Adapted wav file loader for more bad interpretations of a bad format.  
Mapped incoming "all notes off" MIDI message to panic.  
Removed obsolete '16.8' version of the 32Bit wav rendering.

### **Edison:**

EQ, blur & reverb tools now remember their envelope editor settings.  
unselects when live selection is too short (<150ms), and added live selection as published parameter.  
new fancy waveform display mode, and option to export display to bitmap file.  
added stereo waveform display.  
new slave sync, pause button, transport active when not playing, support for control surfaces and keyboard input (to slice or for sampler preview).  
can now link notes to markers/regions (for use in Fruity Slicer).  
added "Undo mix (spectral)" and "Paste mix (spectral)" features.  
added keyboard (to note or to slice) preview.  
added 'quick rename (all)' option to rename all regions to drum names.  
Edison & Sytrus now captionize themselves when starting a sample drag.  
new Tools->Send to playlist as audio clip, to send the clip to the playlist at selection, linked to the same mixer track as Edison.  
new drum(loop) stretching tool (& paste replace (drum)), with improved gaps filling.  
CTRL+DRAG drums from one instance to another, to replace drums in a loop with drums from another loop.  
slide option now works on markers/regions too.  
hold right-shift to move markers more accurately (temporary zoom).  
New phase editing feature in Edison's EQ.  
Added middle note & score detection  
Improved smoothness when recording for several minutes  
new 'dual view' mode showing both waveform & spectrum.  
added tools->sequencing->send to selected channel, to quickly send audio to the selected channel without dragging (mainly for Fruity Slicer).  
Changed spectral display's windowing to Kaiser.  
new support for region types, and grid aligned to first downbeat marker.  
new tempo detector that gives better results for fixed-tempo songs.  
added 'Time format' menu to display time regardless of the grid mode.

### **Dashboard:**

fixed scroller freeze issue  
edit string dialog now pops up on correct screen  
"send value" for patch control no longer generates an exception  
messages are no longer added to a buffer to be sent during processing

### **FPC:**

invalidate synthpanel on resize, to avoid graphical glitch when resizing the editor with "Show window contents while dragging" off in Windows  
mouse wheel now changes pad  
some cosmetic changes  
pan envelope is now bipolar  
fixed some save dialog glitches.  
fixed envelope handling.  
added wave preview in open dialog.  
small UI changes  
better behaviour when samples are missing  
changed direction for changing pads from mouse wheel  
fixed midi loop loading, it now takes into accounts the steps per beat

#### **Video Player:**

do nothing in TVideoViewer.AcceptMediaSample to prevent creeping cpu usage  
moved position updates from Process to Idle function, to save some cpu usage  
detached video will now keep playing if the plugin editor window is hidden  
added "Ignore tempo changes" option  
fix to prevent rising cpu usage.  
"render fast" is now the default

#### **Fruity Wrapper:**

"Export all programs as Cubase presets" saved the current program in every file  
fixed new implementation of ProcessParam to avoid "integer overflow" exception when adding an automation clip  
added hint when plugin parameter changes  
some fixes in ProcessParam  
now flushes plugin (inactive/active) in the PlugIOChanged callback  
don't send "all note off" message for effects  
the fixed size output buffer for effects are now initialized to zero before processing  
now call AllocBuffers when the blocksize changes  
renamed menu items for saving/loading fst and fxb files to "VST" instead of "Cubase"  
added "Send note off velocity" option  
implemented support for sysex messages sent by the plugin (untested)  
let FL re-read key names when updateDisplay message is received from VST plugin

#### **DirectWave:**

fixed bug showing save program dialogs  
added file compatibility options to (global) options dialog  
"gain" control on zone tab now defaults to 0.0dB again  
"gain" control on zone tab is now multiplied to the volume instead of added  
updated downloader implementation  
double-click on zone (or zone index) now opens sample tab  
now need to right-click on sample scroll bar to zoom  
fixed drag&drop crash  
made library scan (for popup menu) a lot faster  
fixed browser resizing from config dlg  
fixed behaviour of browser expansion with multiple instances  
changed volume and velocity implementation  
re-implemented soundfont support, now supports 24bit soundfonts  
fixed resizing in FL version, made it more spec-compliant in VSTi version  
some VST specific improvements  
fixed crash in VSTi when opening/closing browser because of incorrect FL version check  
effect switches on the zone page now also act according to the "global" switch  
improved demo mode save/restore for VSTi version  
fixed window size bug (browser open/closed) when opening editor  
fixed ogg import, made it use 32bit float samples instead of 16bit int



restructured files, recompiled  
fixed "full range" behaviour for selectors

**(Bug)fixes :**

Bugfix in envelope point snapping.  
Bugfix in Sytrus unison sub.  
Little bugfix in Edison's looping tool & trimming option.  
Bugfix in stretching engine.  
Bugfix in monophonic mode combined with Fruity Slicer plugin.  
Fixed weird bug importing corrupted playlist data from FL6 projects.  
Fixed keystrokes not getting to FL when mixer was detached & focused.  
Fixed strange bug with ASIO.  
Fixed little bug when reordering mixer tracks.  
Fixed crash when closing FL while project browser was open.  
Fixed tiny browser bug.  
Fixed bug in WaveShaper & Sytrus bipolar to unipolar mapping conversion.  
Fixed thread-locking issue with multiple smoothed up remote control combined with visible project browser and knob tweak undo enabled.  
Bugfix: quick quantize no longer resizes playlist clips.  
Fixed rare arpeggiator bug.  
Fixed problem loading some VST 2.4 plugins.  
Little bugfix in Sytrus envelope release combined with sustain level.  
Fixed crash in Vista when Data Execution Prevention is on  
Fixed some possible deadlocks when MIDI-controlling parameters.  
Fixed little bug in Fruity Slicer's note dump.  
Fixed little problem in MIDI input window.  
Fixed big bug in wav file loader when regions have comments.  
Changing MP3 bitrate in renderer now doesn't reset all plugins anymore (was slow for some plugins).  
Fixed browser not restoring top item in some cases when switching snapshots.

**7.0.0 (03/01/2007)**

Little GUI redesign.  
Sytrus: hint in harmonics editor not lagging anymore.  
Sytrus / envelope editor: ctrl+shift to bypass point snapping.  
Sytrus / envelope editor: multilevel undo & display updates.  
Fixed little memory leak in browser's history.  
Fixed wrong displayed hint for automation clips.  
No more flicker when resizing plugin windows.  
New resampling engine, support for mono & 32bit wavs.  
Mapped scroll-lock key to FL's autoscrolling.  
Switched to Delphi 2006.  
Fixed tiny glitch with mixer icons.  
BeepMap: can now drop bitmaps onto channel buttons.  
Improved audio recording to disk (no more crackles when recording lots of mixer tracks).  
Reworked toolbars, with CPU usage graph and RAM meter.  
Can now edit samples from the browser item popup.  
Can now drop any file onto the browser to get the folder added to the extra folders (handy when using the browser to preview sounds).  
Added large browser aspect.  
Fixed minor bug in multiband compressor (master meter was all mono).  
Fixed crashing bug in granulizer.  
Little bugfix in Fruity Delay Bank.  
Small UI changes & optimizations in Sytrus.  
New Fruity Love Philter effect plugin.  
Sytrus: little speed improvement when processing arpeggiated/gated presets.  
Audio device now stored by name rather than by index.  
New Edison audio editor.  
Right-shift in piano roll & playlist to pan the editor (same as in Edison).  
Support for 16bit integer/32bit float/mono/stereo samples inside FL, Fruity Granulizer & Fruity Slicer.

Faster slicing in FL, Fruity Slicer, Fruity Granulizer and Edison.  
Added spectral view in Fruity Slicer.  
Sytrus: several speedups when triggering voices, computing & importing shapes.  
Fixed crashing project browser when a mixer control was linked in omni mode.  
Sytrus: slightly improved plucked string generator.  
Fruity wrapper: added "Invalidate editor window" option (on by default)  
Fruity wrapper: fixed bug in preset names that start with "-"  
Fruity wrapper: bugfix: effect version copies input to output when no plugin is loaded  
Fruity wrapper: bugfix: "fixed size buffers" option is now saved for each plugin  
FPC: added popup menu for sample displays  
FPC: middle-click on a sample display now opens that sample in Edison  
FPC: fixed layer display after dropping a wave  
FPC: fixed a crashing bug with empty layers  
FPC: reimplemented resampling  
FPC: re-implemented sample loading, it's now independent of FL's sample loading and loads mono and 32bit samples faster  
FPC: fixed two bugs importing midi files and other minor bugfixes  
ReWired: added selection of bus and channel for the ReWired channel to send its notes to (midi options window)  
FL DXi: updated calculation of time information to prevent continuous resynchronizing in Sonar versions 4.04 and up  
Edison: much improved spectrum display.  
Sytrus: little speed & quality enhancement and now up to 256 harmonics per operator.  
Sytrus: fixed rare crash when editing waveshaper envelope.  
Added new stretching methods to FL & Fruity Slicer.  
Added stretching tool to Edison.  
Mono ASIO inputs now listed in the mixer's input list, so that you can record from mono sources.  
Fixed little bug in mixer state loading.  
Added 'stairs' line mode to envelope editor.  
Some generators can now be threaded for some CPU gain on dual cores.  
Introducing smart disable mode for generators as well.  
Improved fading/declicking in Edison, Fruity Slicer and FL.  
Fixed rare mixer track relocation bug.  
Fixed unreleased notes when using sustain in recording mode.  
Linked sustain pedal to step jump in step editing mode.  
Sytrus: unison panning, volume and pitch now update running voices when automated.  
Sytrus: added 'bipolar LFO tension' option to LFO's.  
Sytrus: added cherry phaser filter.  
Browser now previews the sample's root note.  
Added more safety checks for bad wav samples.  
Plugin windows & mixer can now be detached from the main window.  
Fixed tiny keyboard problem with detached windows.  
Added pattern clips to the playlist.  
Improved zoom tool in playlist tracks.  
Ctrl+right click = zoom in playlist & piano roll.  
Undo for automation clips, and more meaningful undo names.  
Can now turn event automation into automation clips.  
Double-click pattern clips to edit its contents.  
Spectrum can now be displayed in channel settings & audio clips.  
Support for AIFF files in sampler channels & Edison.  
Support for Apple Loops AIFF extensions.  
Updated zipping DLL.  
Dashboard: added "Send all values" option  
Dashboard: fixed sending values of switches and patch selectors  
Dashboard: updates for note off velocity support and note on velocity calculation  
DirectWave: now loads AIFF samples  
DirectWave: VST preset file loader in autosampler  
DirectWave: lots of bugfixes  
FL Keys: fixed loading of some 16bit waves  
FPC: reimplemented voice and envelope processing  
FPC: now loads AIFF, MP3 and REX files

FPC: now exports to SFZ format  
 FPC: preview notes now also trigger cut groups  
 FPC: fixed layer tune  
 FPC: allow selection of regions in a wave for start/end points  
 FPC: added possibility to keep current note layout when changing presets  
 FPC: added option to map every pad to a note one by one (per bank)  
 FPC: the pan envelope can't cut a voice anymore  
 Edison: new click-free editing.  
 Added 32Bit stream option to DirectSound output.  
 FL is now optimized for ClearType.  
 Fixed 2 minor glitches in PR.  
 Escape to abort file searching is now more responsive.  
 Added 'huge' to browser size modes.  
 Playlist clips can now be smaller.  
 Fixed occasional crash when assigning hardware XY controllers to params.  
 Assigning notes to slices made easier in Fruity Slicer plugin ("Last hit key" in menu).  
 Double-clicking a pattern clip opens the piano roll/event editor at the time it was clicked.  
 Added support for Novation ReMOTE SL controller.  
 New velocity & release mapping curves in the MIDI settings.  
 Support for note off velocity in piano roll, imported MIDI files, MIDI out & Sytrus plugins.  
 Sytrus: unlink velocity from volume, link velocity & release to attack & release.  
 New online news & events toolbar.  
 Fruity Slicer: can assign a slice to the last hit key.  
 Fixed MIDI file import bug.  
 Little fix in wav file loader.  
 Video Player: fixed time calculation for steps per beat other than 4  
 Wrapper: added "Save all programs" option  
 Wrapper: several bugfixes  
 Wrapper: added "MIDI Channel Aftertouch" special parameter to control aftertouch in a plugin  
 'Set smart disable for all effects' changed to 'Set smart disable for all plugins' (now including generators).  
 New Fruity Parametric EQ 2 plugin.  
 Fixed crash when deleting channels while project browser was open.  
 Fixed old bug in audio clips.  
 Fixed threading problem with smart disable.

**6.0.8 (13/01/2006)**  
(bugfixes!)

Fixed the wrapper crashing when it receives information from a plugin that it's removing.  
 Fixed FPC crash when changing pad names from the Pads tab.  
 Fixed tempo bug in envelope controller.  
 Fixed bug saving adsr wheels in Envelope Controller.  
 Fixed decimal point bug in Formula Controller.  
 Little bugfix in Fruity Slicer.  
 Fixed wet level in Fruity Squeeze.  
 Tiny bugfix in sampler envelope display.  
 Updated ASIO host.  
 Updated DirectWave to version 1.03.  
 Updated Chrome with tester application.

**6.0.4 (28/12/2005)**  
(bugfixes!)

Fixed non-working shortcut in playlist.  
 Fixed built-in sustain support.  
 Fixed crash while detecting sample tempo.  
 Fixed wrong reloading of sample loop type.  
 Fixed bug in audio clips volume envelopes.  
 Fixed patch selector in Dashboard.  
 Fixed score selection in FPC when an empty folder is selected.  
 Fixed bug in FPC and Fruity wrapper that caused drag and drop to stop working.  
 Fixed bug in Fruity Wrapper showing the selection menu when loading songs with a Waveshell plugin.  
 Fixed dual screen bug showing all menus on the wrong screen when the primary screen was on the right side of another screen.  
 Fixed bug with echo delay presets in channel settings.

Rare bug fixed in Sytrus delay line.  
Fixed browser being able to be resized when docked.  
Fixed mixer send knobs animated when the wrong track was selected.  
Added option to disable smooth scrolling (in FL, not plugins).  
Added warning when loading projects made with a more recent version of FL.  
Made overload-safety feature in audio settings optional (for those who have ASIO troubles).  
Fixed bug in EQUO when processing was skipped.  
Middle click to load projects from browser now prompts for saving.  
Fixed looping and song position in FL DXi when used in Sonar 4.0.3 or later.  
Fixed rendering bug in Fruity Squeeze.  
Fixed bug that caused some DXi plugins to ignore note messages.  
Fixed EQ slider hint.  
Fixed Fruity Fast Dist bug when rendering.  
Fixed bug when moving plugin racks while event editor was open for one of their parameters.

#### 6.0.1 (08/12/2005)

**FL now compiled with Delphi 2005.**

**New popup menu engine.**

**New scale-detecting helper in piano roll.**

**Multiple MIDI input devices are now accepted.**

**MIDI clock sync can now be sent to multiple MIDI devices.**

**All control events can now be edited in the piano roll.**

**Edited events are now stored in a most recently used list.**

**Piano roll now offers 16 note colors (that can be seen as MIDI channels).**

**Piano roll helpers also mark notes that have names (useful with Fruity Slicer).**

**Can now drag individual slices from the Fruity Slicer onto channels (or the explorer), and copy them to the Windows audio clipboard.**

**Revamped mixer with enhanced free track routing (all tracks can now be sends).**

**Piano kb keys now accepted in the MIDI remote control box (white = toggle, black = latch).**

'New 'Link all parameters' option in plugins & mixer'

Can now move mixer tracks around.

New glue tool in piano roll, to glue contiguous notes.

Can now replace a channel type by another (was already doable through presets).

Various other enhancements in the piano roll.

Support for MIDI hold & sostenuto with result directly in piano roll.

Minor usability improvements.

Ctrl+mouse wheel to center-zoom at the mouse position in event editors, piano roll & playlist.

Improved stability/safety for ASIO devices.

Little bugfix in automation clips.

Drag/drop now works on detached playlist.

Speed improvements.

Knobs animation is now smoother (for those who can notice).

Browser revamped visually, with various little enhancements.

Browser smart search feature, allowing things like <sytrus or sims?nth or wav and "rev\* bongo">.

Browser updated to remember its last state, visual drag/drop.

Browser now monitors FL's data folder to refresh itself.

Browser can show all file types & their extension.

Added browser snapshots.

Dropping a file onto the browser jumps to that file (providing it's available somewhere in the browser).

Sytrus: arpeggiator built in envelopes, audio file to envelope analyzer, envelope vertical flipping.

Sytrus: can now drag/drop single-cycle shapes onto harmonics editor, or channel button.

Sytrus: waveforms can now be saved to (32bit) WAV files.

Sytrus: enhanced waveform editing tools.

Sytrus: added 4 new filter types.

Sytrus: can now lock harmonics individually.

Sytrus: can now drag waveforms (click big waveform or ctrl+click small one) onto other synthesizers.

Small mini-piano roll update bugfix when project browser is open.

"Typing kb to piano" feature now works from the browser window as well (accel chars now

only work in the tree when the feature is off).  
Bugfix in level scaling event editor tool.  
New EQUO automatable equalizer plugin.  
New Fruity Reeverb 2 plugin.  
Fruity Slicer: loading/slicing drumloops doesn't break audio engine anymore.  
Live mode: song relocation is bar-synchronized.  
Alt+/\* and Ctrl+Alt+/\* to jump to/select next/previous song markers.  
Misc little enhancements: middle mouse button in browser, mouse wheel working in some new places, etc.  
Added support for some more hardware controllers.  
Ultrasmooth visual feedback now off by default and sets a higher smoothness, and also now applies to fruity plugins.  
Playlist pattern lane gets a popup menu, and selected patterns can be renamed all at once.  
Added option to split (explode) a pattern by channel.  
Shift+piano roll/playlist cut tool now selects a column.  
Alt+click in piano roll/playlist/event editor bypasses the current snap (very handy).  
Shift+left/right or Alt+left/right shifts (nudges) selected notes in piano roll/playlist.  
Bugfix in audio recording undo, and also made it clearer (tells which files are gonna be undone).  
Can now edit note properties to change a note into a slide.  
Added workaround for minor Windows graphic bug in the playlist.  
Added CC standard names to popup in MIDI remote control box.  
Shift+mouse wheel to scroll playlist, shift+right click for playback tool in piano roll, and various similar little enhancements.  
Can now jump to song markers using MIDI input, and create them on the fly.  
Wrappers publish 128 extra parameters for CC's, so that you can control a VSTi without using a MIDI out channel in most cases.  
FL can now send MTC as well as MIDI clock for output synchronization.  
Support for multimedia keyboards (play/pause/stop/prev/next/browser keys, etc).  
Newbie enhancement: long audio files are not kept on disk by default anymore.  
Option to save audio & MIDI clipboard data to files (see tools menu).  
Double-right-click piano roll & playlist brings the options menu.  
Better support for the Korg MS20 controller: cable in/out are mapped to CC to work as switches.  
Enhancement for tablet PC's: most forms states are saved per screen resolution (handy when switching from landscape to portrait mode).  
Enhancement for tablet PC's: stylus mode that allows easier tweaking of knobs as well as several little usability improvements for pencil use.  
App includes a 128x128 icon size for application bars (ObjectDock, etc).  
LAME DLL now loaded dynamically (to avoid problems when FL is used as a plugin).  
Little fix for piano roll splitter losing its aspect ratio when resizing the window.  
Less flicker when resizing some windows (unless detached).  
New 'one-click recording' option for dummies (in the tools menu).  
Added auto-map all ASIO inputs (just like outputs), to monitor all inputs.  
New Fruity Squeeze sound degradation plugin.  
FPC: volume and pan envelopes per pad.  
FPC: pad presets and note layouts.  
New Wasp XT synth plugin.  
Wrappers now automatically save plugin specific settings (optional).  
Video player now has an option to disable rendering audio.  
New GM preset for DrumSynth Live.  
Added support for Frontier Design's TranzPort controller.  
Piano roll note properties can now show note lengths (optional).  
Alt+mouse wheel to change note properties (of the closest note, or the selected ones) in piano roll & SHIFT+mouse wheel to move them around.  
Caps lock to move notes without changing their ending times in piano roll.  
More accuracy in the drawing of events in the piano roll.  
Browser now shows .FNV (envelopes), .DWP (DirectWave) and .FXP/.FXB (VSTi patches).  
New Fruity Envelope Controller plugin.  
New DirectWave sampler plugin.  
New Chrome visualization plugin.  
Fruity Slicer can now export sliced sample.

New sample and preset downloader for FPC and DirectWave plugins.  
Existing automation clips are now adapted when the PPQ settings have changed.  
Added workaround for UAD-1 plugins to work.  
Cue points are not turned into regions anymore.

#### 5.0.2 (26/01/2005)

New key limiter tool in piano roll.  
New score flipper tool in piano roll.  
New level scaling tool in piano roll & event editor.  
Little bugfix in note legato tool.  
Right-click piano roll options button for direct access to tools.  
New 'Arrange windows' item to leave room for the bottom taskbar (handy under Windows XP).  
Keyboard shortcuts now work for detached windows.  
Updated to LAME 3.96.1.  
Fixed XI file loading bug.  
Added per-editor snap override.  
Minor UI enhancements.  
Slightly improved 'prepare for MIDI output'.  
MIDI remote control window now shows a list of all controllers linked to a parameter.

#### 5.0.1 (20/12/04) (bugfixes!)

Fixed 'Add pitch to key' for plugins.  
Fixed crashing bug in Fruity Granulizer.  
Fixed 2 minor bugs in Sytrus.  
Fixed problem with MIDI input in FL VSTi versions.  
Fixed little problem after dismissing the piano roll note properties box.  
Fixed disabled automation clips processed when relocating the song.  
Disabled looping for sample preview in browser (too many bad loop points in samples out there).  
Auto-scrolling doesn't switch off anymore when editing and the song is not playing.  
Fixed problems with dual monitors: FL can now be maximized on second monitor and will remember the monitor it's on when maximized.  
Fixed little playlist shortcut problem.  
Added option to detach playlist, piano roll and event editors from the working area (can be maximized on a second monitor).  
Changed the default wallpaper to a newbie one.  
Newbie enhancement: MIDI settings window doesn't show up anymore to let the user select a MIDI input device.  
Newbie enhancement: "Enable MIDI input/output" switches itself on when you select MIDI devices.

#### 5.0 (20/11/04)

**New automation clips in playlist.**  
**New powerful arpeggiator tool in piano roll.**  
**New Fruity WaveShaper effect plugin.**  
**New option to render audio files with slice markers (regions) built-in (regions are defined as beat markers for Adobe Audition).**  
**Fruity Slicer now gets slices from audio file cue points as well (as well as trigger key #).**  
**Much improved Fruity Slicer, with stretching and REX loops support, and enhanced fill gaps.**  
**New 'make unique' option for audio clips to sever parts.**  
**New time-stretching and pitch-shifting in audio tracks (with several modes, including the Elastique engine).**  
**Tempo-synced preview of stretched samples.**  
**Added author & genre to song properties, saved inside WAV files and MP3 tags.**  
**Added tempo detector to audio tracks to align project tempo to song clips.**  
**New drum flam tool in piano roll.**  
**DrumSynth Live now supports 120 patches.**  
**Enhanced Fruity Granulizer with transient-alignment and new skin.**  
**Audio recording can now be undone, and mixer track arming button can be right-clicked not to prompt for a filename.**  
**Added note legato and articulation tool in piano roll.**  
**Basic loop recording.**  
**Added tempo tapping feature.**

**New FPC drumkit plugin.****New Collab tool to work on shared projects.**

Added better automation smoothing to MIDI remote control (knob works as 1 pole or 3 poles).

Can now load MP3's into sampler channels and audio clips.

Setting for steps per beat now adjust tempo as well (no need for tempo-doubling tricks anymore).

Fruity Slicer note dumping is now done in piano roll selection (if any).

New slicing engine in Fruity Slicer and FL (audio clips).

Stacked notes in piano roll randomizer now work better.

Made brush default tool in event editor.

Little bugfix for monophonic mode in step sequencer.

Restyled Fruity HTML NoteBook plugin.

Background wallpaper can now be HTML pages.

Bugfix in Sytrus (making it a little faster).

Added copy/paste preset to Sytrus, to share presets between all plugin versions of it.

Added global envelope mode to Sytrus (version 1.2), for perfect gated presets.

Fixed crash when deleting MIDI out channels sometimes.

Song markers now properly stored in rendered waves even with tempo changes.

Fixed memory leak in Fruity Slicer plugin.

Updated drum list in the MIDI out plugin to the GM2 standard.

Made channel resampling option always enabled.

'Keep on disk' samples can now be modified (loaded from disk when needed).

Can now check 'keep on disk', 'resample' & other options even when not possible.

Newbie enhancement: snapping is off by default.

Can now drop samples onto the channel settings window.

Preview now only loads the few first seconds (for MP3's to preview faster).

XY controller now supports multiple joysticks.

Right-clicking the recording disk to arm a mixer track won't prompt for a filename.

Added option not to auto-unarm mixer tracks.

Selecting an ASIO input now arms the mixer track automatically.

Added option to trim audio clip parts outside playlist selection.

Auto-envelope cleaning in step edit mode in Sytrus & Fruity Waveshaper envelopes.

Remove transposing from quantization tool - quantization scores can now safely contain notes other than C5.

Toolbars can now be locked.

Replace 'Ignore velocity' option by 'Velocity link', to control per-note filter using velocity.

Can now shift+click note events to unselect them.

Can now set one of the external audio editors to replace the default one.

Added support for Hercules DJ Console (when set in MIDI mode, endless knobs, coupled switches, special switches & middle jog work).

Added sampler interpolation method selector for realtime playback (audio settings).

Removed obsolete 1..9 pattern selector.

FST and FSC file extensions are now associated with the app (and loaded in new channels).

Auto-scrolling switch now in the main part of the UI, and auto-disabled.

Song selection now shown in the transport slider as well.

Minor cosmetic changes and new wallpapers.

Shift disables 'typing keyboard to piano' feature, handy to access shortcuts such as R for record.

BkSp shortcut for quick snap switch.

Fixed problem with incoming MIDI note off messages too quickly after note on.

Minor fix in Fruity Vocoder.

Removed (abused) live loop, in favor of Collab.

**4.5.2 (4/03/04)**

Upgraded plugin menus: easier way to browse/automate parameters.

Added 3 band equalizer and soft mode option in Sytrus.

Added option to use mixer position as playback position, for those who have crappy sound drivers and experience jerky playback cursors.

Small bugfix in event editor zoom/select.

Small bugfix in effect preset selector.

Bugfix in Sytrus (was unstable).

Little glitch fix in Sytrus.

Changed scale for harmonics level editing in Sytrus.

Fixed problem with some ZIP files not created (really this time).  
Small bugfix in automation recording.  
Fixed arp/slide last bugs (I hope).  
Fixed tiny visual glitch in browser.  
Notes in step seq now restricted to the channel's keyzone.  
Added repeat mode to arpeggiator.  
Sytrus presets are now compressed (was needed for the VSTi version).

#### 4.5.1 (29/12/03)

**New Sytrus generator!**  
**New 'auto' mode in arpeggiator (finally works like a classic arp now).**  
**New playback function in piano roll.**  
**New strum tool in piano roll.**  
**New Fruity Flangus effect plugin.**  
**New ReWire (host & client) support.**  
Playlist / piano roll selection now updated when changing PPQ.  
Added ASIO clock source selector (for compatibility with the Tascam US-122)  
Added ASIO CPU check for more stability (prevents freezing GUI).  
Removed the obsolete 'tiny slices' rendering setting & improved rendering.  
Added beep metronome sound.  
Bugfix in Fruity Slicer plugin.  
Bugfix in channel grouping while loading songs.  
Little bugfix in playlist.  
Little bugfix in preset switching.

#### 4.5 (3/11/03) (boxed release)

Bugfix in FL Keys & dashboard plugins.  
Added support for the Edirol PCR-30/50 controllers (see \System\Hardware specific).  
Little bugfix in layer loading.  
Little bugfix in automation smoothing.  
Added warning when saving to a protected MIDI file.  
Inserting space in playlist now moves markers as well.  
Editing playlist markers is now undoable.  
Bugfix in 'zoom on selection' in piano roll.  
Alt+click to default note levels in piano roll.  
Small bugfix in PPQ changing.  
Bugfix in playback indicators in piano roll.  
New free Slayer & FL Keys plugins (actually were in 4.1.2).  
Improvement: arpeggiator now works fine with short single-hits.  
Don't ask why it's a 4.5 version already :)

#### 4.1.2 (1/07/03)

**Added automation smoothing feature.**  
**Added Fruity Keyboard Controller plugin.**  
**New undo history in project browser.**  
Added 'insert/delete space' in playlist, piano roll & event editor.  
Now showing plugins & their parameters in the project browser.  
Added output visual to Fruity Formula Controller plugin.  
Improved internal controller handling.  
Improved pattern merging.  
Fixed rare automation problem.  
Fixed handling of special audio input format.  
Event editor LFO tool can now be cancelled.  
Bugfix in MIDI file import for controllers.  
Small bugfix in Boobass plugin.  
Sampler channels now load 24Bit integer wave files.  
Fixed small bug in Fruity Slicer.  
Fixed small weird bug in plugins.  
Fixed sampler channel filters consistency accross sample rates. Projects not made at 44100Hz might sound a little different!  
Small fix in Fruity Parametric EQ at 22000Hz.  
Small fix in filter for Fruity Delay 2.  
Small visual fix in Fruity Slicer.  
Bugfix in Fruity Phaser plugin.



DS script loading bug (on some systems) finally fixed.

**4.1.0 (7/04/03)**  
(bugfixes!)

**Many bugfixes.**

**New cool (and free) vocoder plugin!**

Added CTRL+N shortcut for 'Save new version'.

Added 'Link selected channels -> Starting from this track' to easily auto-assign mixer tracks to existing channels.

**4.0 (5/03/03)**  
(FL Studio)

**Brand new playlist.**

**FX window becomes a mixer.**

**Audio clips can now be added to the playlist.**

**Fruity Slicer now auto-slices without the need for a registered BeatSlicer. Same for the 'File->Import->Beat to slice' feature.**

**Added audio input (ASIO only) to the mixer.**

**Added direct-to-disk recording & offline rendering of mixer tracks.**

**FL Studio now available as a DXi plugin (FL Studio DXi, FL Studio VSTi, 1 & 16 out versions).**

**New Wave Traveller generator plugin.**

**New BooBass generator plugin.**

**Revamped randomizer, now also available in piano roll.**

New integrated wave editor for channel samples.

Fixed minor TS404 preset problem.

New cutting tool to piano roll & playlist.

Small bugfix in SimSynth Live.

Mixer now has 64 insert tracks.

Mixer tracks can route to other mixer tracks, allowing groups & sub-groups.

Effects now have automated mute & mix level.

Can now save mixer track presets.

Patterns can now have different lengths.

Can now set pattern color.

New black note display mode in piano roll.

New brush mode in playlist and piano roll.

New time scaling in piano roll (hold shift & resize notes).

Various improvements in piano roll.

Right-clicking the mini piano roll jumps to the clicked position.

New time markers in playlist (numpad . to jump to the next one).

Time markers are saved in rendered waves as cue points.

Reworked & added some new artwork.

Fixed small bug in envelope display.

Fixed small bug in event editor line tool.

Fixed MIDI sync output device not remembered.

MIDI sync device is now shared with MIDI output devices.

Can now record in song mode into a pattern that hasn't been triggered (pattern is then added to the playlist).

Can open the project browser from the playlist.

Added some 3DNow! optimization (Fruity Parametric EQ & various internal things now 2x faster on AMD's).

Added graph in remote control mapping window.

Fixed precomputed effects at other sample rates.

Fixed FX send automation bug.

Added phase randomness option to 3xOsc plugin.

Added autoscrolling in playlist.

Added some usability improvements.

Omni mode also works for mixer in remote control window.

Changed the way some plugins work with timers.

Can now set the track in which preview & metronome are mixed.

Fixed bug with GDI in browser.

Fixed window visibility bug.

Added live mode to playlist.

Fixed invalid automation problem after loading presets over a TS404 channel.

Fixed rare bug with event editor's line tool.

Slightly updated look of the Fruity Slicer.  
Old precomputed effects are now hidden by default.  
Rendered wave files now have loop points, useful when rendering using the leave remainder option.  
'Save modified sample as...' now saves loop points.  
Audio clips can be chopped up into regions (cue points stored in wave files or slices stored in ZGR's).  
Pattern cloning now clones automation.  
Fixed GDI leak in Fruity NoteBook.  
Updated LAME mp3 encoder to version 3.93.1.  
Various bugfixes in FL VSTi.  
Support for multiout VSTi plugins (generators only).  
New wave editor.  
Small improvement in BeepMap plugin.  
Step sequencer editing is now undoable.  
Fixed rare note-dragging crash in piano roll.  
Fixed glitch in sampler channels.

**3.5.6 (29/07/02)**  
(more bugfixes!)

Support for Tascam US-428 controller.  
Formula in MIDI remote control box can now modify increment step (for endless knobs).  
Can now select rows of notes in piano roll.  
Added 'fit to time' option to Fruity granulizer.  
Fixed weird rare automation bug.  
Improved wrappers & fixed timing info.  
Added 'pausing steps' in some knobs & sliders.  
New user interface for SimSynth Live.  
VSTi version now renders properly in Cubase.  
New clock toolbar.  
Changed tempo & pattern selectors.  
Fixed Wasp's envelope link problem.  
Fixed small playlist selection bug.  
Fixed various minor bugs.

**3.5.5 (4/07/02)**  
(bugfixes!)

Bugfixed DrumSynth Live.  
Time hint in step sequencer.  
Added support for Peavey StudioMix controller (knobs, sliders, switches & jog).  
Added support for StudioMix switches.  
Added support for 'endless' hardware controllers (Doepfer Pocket Dial).  
Setup now warns about logging as administrator.  
Various other bugfixes.  
Formula presets in MIDI remote control box.

**3.5.4 (19/06/02)**

**Can now copy, paste, save & restore automation.**  
**FruityLoops now available as a VSTi plugin.**  
**Multi ASIO output added.**  
**New advanced quantization in piano roll.**  
**New advanced pattern-based chopper in piano roll.**  
**Improved channel envelopes (tension).**  
**Added batch export of FX tracks into separate wave files.**  
**New Fruity fast dist plugin (same dist as for the TS404).**  
**New Fruity soft clipper plugin.**  
**Improved Fruity slicer plugin (added 'fill gaps' option & slice reversing).**  
**Improved global beat slicing (layering).**  
**Improved Fruity wrapper plugins.**  
**Added recording precount.**  
**Support for speech synthesis (.speech files).**  
**Added sample start to Fruity granulizer plugin.**  
**New step edit mode.**  
**Much improved (but not compatible) TS404.**  
Fruity wrappers now support DXi2 plugins.  
New kick synthesizer plugin.

Improved (but slower) sinc interpolation (thx to arguru).  
 Improved hermite interpolation (now 6 points) (thx to Yehar).  
 Right click wait for input to allow it only when recording.  
 MIDI activity LED now blinks yellow if the MIDI message wasn't handled (assigned to nothing).  
 Master sync now sends MIDI continue message instead of MIDI start.  
 Time in seconds now displayed by the playlist in the hint bar.  
 Project bones now includes automation as well.  
 Fine time offset knob now automatable (can now do shuffle using internal controllers).  
 Peak meters optionally in dB format (see general settings).  
 Tiny bugfix in envelope processing.  
 MIDI out plugin now supports channel aftertouch (& also redesigned visually).  
 Removed unuseful auto maximize & stop at bottom options.  
 MIDI remote control window redesigned a little.  
 Added quick preset randomizing & hybridize mode for plugins.  
 Slightly improved pattern humanizer.  
 Fruity soundfont player now searches for the first valid patch after a soundfont is loaded.  
 Added 'explore' menu item to browser.  
 Added 'Select linked channels' option & FX track renaming (effects window).  
 Bugfix in soundfont player & improved HQ rendering.  
 Bugfix in echo delay combined with the time shift.  
 Bugfixes in Fruity reverb (now works fine at any mixing rate).  
 Small bugfix in channel muting.  
 Small bugfix in layer channels.  
 Small bugfix in Fruity slicer (sample rate conversion).  
 Small bugfix in step seq vol knob's gauge.  
 Color=\$BBGGRR now recognized in browser info files.  
 Fixed two bad memory leaks.  
 Bugfix in DrumSynth patch loader.  
 Improved step sequencer.  
 Mouse wheel now scrolls step seq keyboard edit.

### 3.4.0 (19/12/01)

**Added fat mode to channels (echo delay tab).**  
**New input to output mapping formula in remote control linking.**  
**Added Fruity formula (internal) controller plugin.**  
**New Export->Project bones (exports all channel & effect presets + scores, to merge projects easier).**  
**Introducing channel filtering for easier reading of the step sequencer.**  
**Introducing layer channels, to control several channels at once.**  
**Fixed the freezing on some systems with the MIDI output enabled.**  
**Added activity meter to channels.**  
**New Fruity chorus plugin.**  
**New Fruity DX10 & SoundFont player plugins.**  
 Can now move patterns (or blocks of patterns) up/down (see playlist menu).  
 New 'save new version' option.  
 Note properties editing in the piano roll now works only for selected notes, if any.  
 View all channels (ghost) mode in piano roll.  
 Added vertical zoom in event editor.  
 Added tempo fine tuning (song settings).  
 Relooked testing kb, now with visual feedback & layer key zones.  
 Removed 'shuffled' option in channel's echo delay.  
 Added 'Play to end' option to Fruity slicer plugin.  
 Arpeggiator time to max = holding.  
 Added 'add root note to key' feature (useful for Fruity slicer & Fruity soundfont player).  
 Fixed patch not restored by the MIDI out.  
 Fixed last MIDI device not working for MIDI output sync.  
 Samples with loop points stored in wrong order are now loaded properly.  
 Little startup things are now set to better default values.  
 Removed raster visual effect in event editor.  
 Removed random association, replaced by the channel layering, better but incompatible.  
 Channel aftertouch now mapped to #253 in MIDI input mapping (key aftertouch=#254, pitch bend=#255).

- 3.3.0 (16/10/01)**
- Multiple MIDI devices can now be controlled at once.**
  - Introducing internal controllers.**
  - New Fruity stereo enhancer plugin.**
  - New Fruity delay 2 plugin.**
  - Added 2 FX send tracks & up to 8 plugins per track.**
  - Better plugin lister, now verifies & sorts plugins.**
  - New, rather accurate, global (multichannel) MIDI file import.**
  - Added portamento to all channels.**
  - Added velocity & kb tracking to all channels.**
  - Added ASIO output (no multichannel output, will be done, don't ask).**
  - Fruity wrapper can now read \*.FXB files.**
  - Added portamento's in step sequencer & per-channel gating.**
  - Added Fruity Slicer, Fruity Granulizer, Fruity Big Clock, Fruity dB meter plugins.**
  - Added Buzz machines wrapper (generator & effect) plugins.**
  - Added levels adjustment per channel, for easier automation & preamp.
  - Added pitch per note in the piano roll.
  - Effect plugins can now be named.
  - Changed knobs popup menu (added 'Copy value' & 'Paste value')
  - Got rid of the 'filenames with spaces in them loaded as several files' problem.
  - Improved sample view in channel settings.
  - Bugfix in plugins custom shapes.
  - Fixed minor bug in FX sends.
  - Remote control mapping now updated when modules change.
  - Remote control mapping now saved in FLP's, not as a general config anymore.
  - Bugfix in channel FX track # automation.
  - Bugfix in channel settings repaint (very rare & harmless bug).
  - Fixed thing in levels ramping (rendering with 'tiny slices' on is now perfect).
  - Added a wallpaper (Title.jpg).
  - Minor bugfix in mixer.
  - Removed Export->Click marked samples option (hello alt+s freaks).
  - Fixed rare bug in mixer.
  - Fruity plugins own data can now be collected & included in zipped loops.
  - Small bugfix in plugin preset selector.
  - Added a couple of new 3xOsc presets.
  - Fixed some disappearing cursor problems.
  - Fixed bug in sampler channels envelopes & MIDI remote control.
  - Note properties box now also works on selected notes in piano roll.
  - Added features to the 3xOsc.
  - Added automatable gate time in channels (FUNC tab, mainly for the step seq).
  - Little bugfix in volume envelope attack.
  - In pattern mode, the whole pattern is now rendered, not just the first bar.
  - Remote control mapping now listed in the project browser.
  - New, better set of fonts.
  - Updated LAME mp3 encoder to version 3.89.
  - New bugfixed Fruity Scratcher, WASP & Fruity phaser plugins.
  - Fruity Spectroman can now display in stereo.
- 3.1.1 (3/05/01)**
- Bugfix in song relocation.
  - Small bugfix in project browser.
  - Small bugfix in 'Go to next empty pattern'.
  - Added Fruity LSD & Fruity Spectroman plugins (reg. only).
  - Added log decay switch to envelopes.
  - Changed sliders a bit.
  - Updated Fruity plug SDK.
- 3.1.0 (11/09/02)**  
(boxed version)
- Project (automation) browser.**
  - Now supporting DXi plugins!**
  - Piano roll data can now be copied from the step sequencer.
  - Added 'Init with current position' in event editor.
  - Added right click on snap selector for stock note lengths.

Fixed Jedi mode :) disappearing mouse cursor problem.  
Wrapped VST plugins now save their state into chunks (useful for the BS-1).  
Bugfix in Fruity Mute 2.  
Harmless bug when closing 2 event editors at once fixed.  
Removed background wallpaper centering.  
Favorites now available to channels as well.  
MIDI input now handles start / stop / continue messages.  
Added (dirty) workaround for taskbar covering problem.  
Cyril problem finally fixed!  
Minor bugfixes.  
Added project uploading feature.  
New user-made MIDI out presets.  
Turned auto snap into auto smoothing in event editor.

### 3.0.1 (26/02/01)

#### **Arpeggiator for each channel.**

Exporting to MIDI file now works.  
Small bugfix in mixer & pattern playing.  
Effect version of Fruity wrapper plugin now properly listed.  
Minor bugfix in channel's edit menu.  
Bugfix in closing piano roll.  
Minor bugfix in MIDI out plugin.  
Various bugfixes in wav renderer (can now render a playlist selection properly).  
New user-made MIDI out presets.  
Improved dropping of audio tracks into the playlist.  
Improved auto channel naming.  
Introducing \*.FSC FruityLoops score (piano roll) presets.  
Minimized mode in piano roll.  
MIDI files now appear in the browser (to be dropped onto piano rolls) as well.  
Plucked! & 3xOsc plugins now support custom shapes.  
Pattern (visual) length now saved in projects.  
Various other improvements.

### 3.0.0 (25/01/01)

#### **New layout.**

#### **Piano roll.**

#### **Event track now per pattern.**

#### **New FX tracks (now 16 inserts + 2 sends)**

Centered views for some controllers in event editor.  
Optimized song positioning.  
Typing keyboard to MIDI option.  
Added metronome.  
Updated to new DrumSynth renderer.  
Added custom controls for DrumSynth presets.  
Channel mute switch & FX track # are now automated.  
MIDI controllers can now control several channels at once.  
Fixed syncing problem.  
New MIDI output plugin & much better MIDI support.  
New plugin system (effects & generators).  
New plugins: 3x Osc, BeepMap (image synth), Fruity PanOMatic, Fruity NoteBook, MIDI out, etc.  
Slight optimization in TS404.  
Added MIDI kb to mute/solo mapping.  
Peak meter now shows clipping.  
Knobs should work better under Win2k.  
Added new filter types.  
New, better pattern randomizer.  
Fixed ugliness with system fonts set to large.  
Added 'smart disable' feature in effects.  
Added antialiasing to TS404 (rendering only).  
Much more...

### 2.7.1 (25/09/00)

#### **Small bugfix release:**

Fixed problem with some Win2k configs & registration.  
Fixed small problem with multiple monitors (again).  
Fixed little bug in TS404 starting note.  
Fixed minor bug in event editor.  
Fixed right click on loop icon in playlist.  
Fixed minor visual bug in title bars.  
Fixed minor bug in sample display.  
Fixed bug in playlist hint.  
Bug in 3DFX display drivers avoided (they've fixed it too).  
Improved Fruity reverb plugin (no more slowing down).  
Much faster sample locating.  
**Added Fruity phaser plugin by Smart Electron:x.**

#### 2.7.0 (22/07/00)

**LP x2 filter added to channels.**  
**Global channel LFO added, handy for basslines.**  
Beatslicer standalone editor added.  
Alternate B-splines interpolator in event editor (right click).  
Snap mode (with interpolation) in event editor.  
Added presets to envelope time wheels.  
Added a couple of great instrument presets.  
Added dithering to 16Bit option (rendering only).  
Improved SS2 preset renderer.  
Updated LAME mp3 encoder to version 3.84  
Surround effect removed, added 'Fruity phase inverter' to replace it.  
Fruity Fast LP plugin added (the main filter will disappear in a future release).  
ZIP & RBS ext added to sample browser, & FLP's are shown in all folders.  
Fixed envelope LFO shape not saved in FLP's.  
Bugfix & slight optimization in TS404.  
Had to remove bitmaps from song info edit, too much buggy :(  
Bugfix in filter section (was always on... eating unneeded CPU).  
Fixed 2 bugs in TS404 preset loading.  
Bugfix in pattern rendering when playlist has a selection.  
Bugfix in main oscilloscope.  
Fixed random association not saved properly.  
Added 'Don't limit windows to screen' option for multimonitor support.  
More safety checks for 'altered project' flag.  
Graphic engine changed, now eats a lot less graphic resources.

#### 2.5.4 (6/05/00)

**Added LP, BP, HP & Notch to channel filter.**  
**Support for plugin presets (sample browser).**  
Bugfix in sample loading.  
Wide skin script fixed.  
Fixed filter bitmap in TS404 interface.  
Better (typing) kb mapping for testing (channel settings kb).  
Updated LAME mp3 encoder to version 3.70  
Fixed linking of envelope wheels to MIDI controller.  
Improved SimSynth 2 renderer DLL.  
New instrument patches by BSB.  
Win2k compatibility: RichEdit crash fixed, selector display fixed.  
Fixed fine tuning not saved in FLP's.  
Fixed recorded sample saving.  
Fixed big samples always set as keep on disk samples.  
Fixed old bug in playlist.  
Fixed bug in sampler envelopes.  
New SimSynth 2.7 patches! (/SS2\_Extra/2.7)  
New humanize presets.

#### 2.5.0 (13/04/00)

**Full envelopes & LFO (pan, vol, filter & pitch)!**  
**New \*.FST 'channel state' files (instruments - replaces \*.404 files).**  
**New design for the TS404 (also added triangle LFO shape).**  
**Tempo is now sample-accurate (useful when you render a lot of bars).**

**Channel settings window redesigned.**  
**Partial import of ReBirth 338 song files.**  
**New impressive reverb plugin by Ultrafunk.**  
 Fixed bug in rendering of TS404 (distortion).  
 Fixed bugs in ZIP export.  
 Minor bugfix in changing PPQ.  
 Timing is all new inside & more accurate.  
 Rendering changed & bugfixed (tempo changes).  
 DirectX filters support updated.  
 Added 'live loop'.  
 Autostretch follows tempo changes.  
 Old crap trashed out: mix feature (graph edit) & vol/pan/pitch/mix wheels.  
 FX in the graph edit reordered.  
 Fixed small problem in level ramping.  
 Echo delay now linked to the channel.  
 Added presets to event editor LFO (speed wheel popup).  
 Now TS404 sustain max = infinite.  
 User skins will have to be slightly adjusted to work with this release.  
 Minor bugfix in pattern editor.  
 Fixed rare click problem with resonant filter.  
 Fixed crash when setting tool launched at startup with channel sample.  
 Added sinc interpolation (very slow - rendering only) because cubic is sometimes noisy.  
 Now 1000 bars in playlist.  
 Rearranged plugins list (too many on screen) + favorites.  
 Background process for long renderings.  
 Added keep on disk samples.  
 Added option not to resample waves (better for looped stuff).  
 Added support for pyramid panning shape (circular is good but can generate clipping).  
 Added 'keep notes continuous' tool (handy for TS404 without gate).  
 Fixed rare crash with channel settings form & channel cloning.  
 Added handy 'clone pattern' macro (tools).  
 Mapped key aftertouch into controller 254.  
 Pitch bend now supported.  
 Removed click removal option (always on).  
 Filter now automated.  
 Graph edit now allows offset of the filter.  
 Added precalc DC offset removal.  
 Now renders playlist selection, if any.  
 Can now re-read the sample browser without collapsing everything.  
 Improved beat slicing (merging, shifting all the notes, checking for 'groups').

### 2.1.1 (19/01/00)

**Now using the LAME MP3 encoder for the best quality!**  
**Tempo changes now recorded too (with some limitations).**  
**Added LFO tool in event editor.**  
**Can now slice up beats thx to the BeatSlicer engine.**  
 Fixed minor visual bug in event editor.  
 More space around wheels (TS404 & VST plugins) not to miss them anymore.  
 Pattern autoscroll now optional.  
 Event editor enhanced.  
 Random tool now affects notes & slides for TS404 channels.  
 Fixed bug with the piano kb & TS404 user shapes.  
 Fixed something with TS404 & patterns.  
 Fixed bug with channel mix/random.  
 Fixed click bug in fake surround effect.  
 Fixed bug in VST plugins handling.  
 Fixed note range in TS404 (some notes were clipped).  
 Prevents nasty slow FPU denormalization also in TS404 delay line & volume ramping.  
 Redesigned humanize box.  
 Removed 'update on each n ticks' option (I had to).  
 Better distortion on the TS404 when rendering (too slow).  
 Changed limitations of demo version.  
 Added about box to Fruity plugins.

Added 'Fruity center' plugin.  
Switched default ticks per beat (PPQ) to 96.  
Switched most time values (shift, delay) to a 192PPQ accuracy.  
Mapped pitch bend into controller 255 for remote controlling.  
Main cutoff now ramped.  
Fixed small bug in window arrangement.  
Fixed slave sync bug.  
Fixed small bug in wav looping.  
Improved support for DirectX filters.

#### 2.0.1 (21/11/99)

Problem with background wallpaper covering some windows fixed. Also redraws smoother.  
Crash with default skin in palettized mode fixed.  
Scrollbars can be moved another way (right click).  
Support for middle mouse button (to reset wheels & scroll windows).  
Added FLP file format description (beta).  
Added plugin editors in view menu.  
Added 'arrange windows' in view menu.  
Removed the 'auto arrange windows' option in settings.  
Removed 'insert pattern in playlist' (not useful).  
Internal sync has changed a lot & visuals are smoother.  
Can now drop sound files on the playlist (very quick for effects on a song).  
No more flicker on some controls.  
Basic MIDI input added (see ReadMe.doc).  
Added record button, mainly for keyboard input for now.  
Autoscroll patterns when playing.  
Added new tips, read them!  
Can now move channels up/down.  
Main reso filter now applied after the master plugins (better).  
Can now render to 32Bit float wavs (for use in CoolEdit Pro).  
Song settings separated from environment settings (more logical).  
Right click a FX track button to pop up the list of plugins.  
New default basic drumkit (Club basic).  
No more pattern & playlist clipboards filled at the same time to avoid mistakes.  
Added 'captionnizing' to event editor.  
Now supports DirectX plugins (crashes to be expected:).  
Added 'Twice slower' in the tempo menu, for easier recordings.  
Added pan wheels to the main window.  
Scans VST plugs in both user & Fruity directories.  
TS404 LFO now adjusted correctly when changing song position.  
Added balance custom plugin.  
Added FruityPro /Reset to make a config reset in case you're in trouble.  
Put the check for another instance back (this time only when there's a command line param)  
(hope crashes won't be reported this time).  
Added 'Open with FruityLoops' in popup menu associated with FLP files.  
Fixed small bug in my use of the TS404.  
TS404 rewritten internally, using floats, no more clipping & more stable filter. Even slightly faster. User shape is back.  
Adjusted range of the filter in the TS404.  
Adjusted the range of all the reso filters.  
Rearranged main sliders.  
Fixed glitch in cubic interpolation.  
Skins now in /Skins subdir. No need to move your old ones, they're not compatible anyway.  
**Main, channel & delay line pan/volume tweakings interpolated to avoid pops.**  
**Channel volume can now be tweaked on the fly (needed for the live recording).**  
**MIDI remote controlling of most controls!**  
**Removed 'ahead duration' mixer setting & added polling & hardware buffer settings for down to a 5ms latency on a SB Live!**  
**Finished new playlist look! (still same features for now)**  
**FX tracks redesigned, now up to 8 tracks available.**  
**Live recording!**  
**Integrated event editor!**  
**Option for more realistic logarithmic levels (song settings).**



**1.7.6**  
(bugfixes!)

small visual bugfixes.  
Prob with SimSynth note fixed.  
Prob when mixing 2 TS404 fixed.  
Prob with dots window fixed.  
Prob with saving of wav files fixed.  
Bugfix in scope.  
Bugfix in the disk renderer.  
Internal sync small bugfix.  
Replaced SHIFT by G to pop up the graph edit (I had to free SHIFT for shortcuts).  
Some shortcuts changed/added (SHIFT instead of ALT for shifting left/right, shortcut for Save as...).

Now renders Acidized wav files.  
Added clone option to the channel pop up too.  
Added cool (but slow) light show (not totally finished).  
**Added export to MP3 thx to BladeEnc.**  
**Can now load SimSynth 2 presets thx to David Billen.**  
Extended params for SimSynth 2 presets (riff, tempo).  
Installer now adds shortcut icon & stuff.  
Keyboard autoscroll when notes are out of range (autocentering would not be a good idea).  
Added 'auto zip empty channels' (general settings) for those who prefer to work this way.  
Problem with last opened projects menu fixed.  
Adjustable fade out (when cut) for better strings.  
Added note fine tuning for samples which don't match.  
Added 'Go to next empty pattern' tool.  
Added 'Select unused channels' tool (to delete them to clean up your song).  
Added useful 'insert & remove pattern' tools.  
No more preview on right click in the sample browser (was annoying).  
Plugin wheels now have a default value.  
More minor enhancements.  
Added ping pong delay.  
Added favorites to more dialogs (useful when exporting to wave file).  
Fine tuning is read from WAV files (middle note isn't - too many C4 by default where it should be C5).  
Added 'Hermite curve' interpolation (even better than linear) on stretching for sample loading & rendering (too slow for realtime).  
Improved sample locating (as Sam wanted).  
Main volume can be raised to 125%.  
VST plugins which have their own editor no longer have built-in wheels. Many are badly written & some crash because of this...  
FX3 is now interpolated (much less noisy).  
Middle mouse button used to reset wheels.

**1.6.5 (20/06/99)**

**Added support for SimSynth files.**  
Can also set the middle note of SimSynth files.  
**Added 4 effect tracks (+master) supporting up to 4 plugins each.**  
Now support all plugins type.  
Plugin stuff saved inside the FLP.  
Now eats less Windows graphic resources.  
Note deletion (right click) bugfix.  
Prob with background picture fixed.  
Probs with Win98 fixed: the RTF format has slightly changed in Win98 & caused crash problems!  
'Reload sample' bugfix.  
More checks for 'bad' wavs (there are).  
Some more minor bugfixes.  
Can now drop TS404 presets to create TS404 channels.  
Inverted the shuffle slider (more logical).  
**Basic pack now included in the install package.**  
**Added 'shift delay' to the graph edit.**  
**Added graph edit presets in the sample browser (text files to edit manually for now).**

### 1.5.23 (3/05/99)

Changed stuff in the main menu.  
Minor visual bugfix.  
Ping pong loop available even when not looped.  
Added stuff in the channel settings sample menu.  
Added the recording box.  
Removed the check for another instance (crash reports).  
**Added the TS404 beta!**  
New cool splash screen.  
Added background tiled bitmap.  
Added cool 'shade' scope mode.  
No more temp directory (uses the windows\temp instead).  
Added zip/unzip support for samples & FLP in one single ZIP package.  
Support for more extra sample directories. Also try to locate missing samples in these dirs.  
Added clone channel option.  
Added true delay line for the TS404.  
Remove mute checkbox in the channel settings (not useful).  
TS404 presets in the sample browser.  
**Can now act as master clock for sync!** (read the ReadMe.doc file for limitations). Sends start / stop / clock / SPP. Should also follow tempo changes. Added sync delay too.  
Removed the channel settings unuseful pan & vol menus.  
Use of devices cleaned a bit. MIDI not opened if disabled. DirectSound not opened if disabled.  
**Changed the mixer engine from 32bit int to 32bit floats.** Shouldn't alter the sound in any way. Even faster (maybe unless you've got an AMD processor).  
Removed support for WinAMP DSP plugins (they're all shit).  
Playlist now starts from 1 instead of 0 (nicer).  
VST plugins support beta.  
Channel settings form shown unactivated to avoid mistakes.

### 1.4.3 (13/03/99)

Minor bugfix in loop files from sample browser.  
Rendering & click removal bugfix.

### 1.4.2 (9/03/99)

Default values for all sliders (right click).  
Max tempo raised to 999 (don't tell me you need more).  
Added cut/copy/paste in the playlist.  
Added pattern naming (right click the top row in the playlist).  
Removed the loop selection & replaced it by looping the cut/copy selection.  
Looped strings (using loop points defined inside the WAV file).  
Better 'stop at screen bottom' (takes care of the task bar).  
Added handy 'Always full height' option.  
Added translation (for DSC) (french & nederlands).  
Tips made external (translation).  
Removed unuseful 'Export loop to clipboard' (now exports according to the loop state).  
Now looks a bit better under weird Windows color schemes.  
Autostretch now up to 512 (but not compatible with old versions of FL).  
Auto detects email in URL box.  
Nasty click removal (have a low bass cutting itself to see the difference).  
Added FastTracker 2 XI instruments support (import only).  
DS & XI files now in sample browser too.  
Wide skin now for reg. only :(  
Alt+click on knobs for quick note off (for strings) (just set volume to zero).  
Changed the wheels to flat wheels in the default skin.

### 1.4.0 (16/12/98)

Last rendered wav path bug corrected.  
Added stereo & 'flower' scope (right click the scope).  
Small bug in the piano keyboard corrected.  
Linked windows (sample list window, piano window) move smoother.  
Little anim on the sample browser.  
Bugfix in autostretch & ending silence trimming (sorry for incompatibilities).  
Added precalc reverb.  
Added loops in the sample browser.

Bugfix in the loop info stuff (!@#! RichEdit control).  
'crash on exit' bugfix.  
Scope crash bugfix.  
Dynamic sample browser (faster).  
Another bugfix again (when loading old loops).  
MultiPlugin crash bugfix (but still a prob here).  
DrumSynth DS files support.  
Added tools to the 'sample scope' popup menu (so you can edit DS files directly with DrumSynth).  
Added 'repeat block length' (just visual).  
ALT+click on a wheel to reset it.  
Zipped channels bugfix.  
Added 256 colors warning message.  
Added some tips.  
Finally up to 64 notes per pattern.  
Patterns take less memory (but who cares).  
Added 'Fill each x notes' to channel menu.  
The prog now takes a bit less graphic resources (but still too much).

### **1.3.8 (27/10/98)**

Added quick 'Load sample...' in the channel context menu.  
Added a small starting 4 channels kit in the package.  
Added auto-scroll to the selected channel (arrow keys).  
Main window never goes below screen bottom.  
Math copro related bugfix.  
Drag/drop small bugfix.  
Added background wallpaper (for those who don't like to have the desktop behind).  
Loop selection in the playlist (right click+drag down).  
More hints on the wheels (numeric value).  
Faster stretching.  
Added linear interpolation to realtime stretching (optional).  
Added interpolation to imported wave files under 44Khz.  
Output scope has a faster response.  
Added 'Big Scope' skin.  
Saves \*.nfo file on rendering (for FruityTracks/DMM).  
Added quick 'copy whole pattern'.  
Added drumkits.  
More compatibility with compressed wav formats (ADPCM & mu-LAW can now be loaded using the installed ACM codecs several times).  
Save modified sample (right click the scope in the channel settings).  
Can now render to mono.  
Finally added pattern length (set globally).  
Added integrated FastWAV-like sample browser (CTRL+B).  
Changed the ugly Windows scrollbar.

### **1.3.72 (01/09/98)**

Checks for another instance & asks to have it closed.  
MIDI tempo now updated when synchronized.  
Another (old) MIDI related bug corrected.

### **1.3.67 (28/08/98)**

Bug in the MIDI rendering/export corrected.

### **1.3.66 (26/08/98)**

Avoid old ComCtl32.DLL bug by loading bullets & slider knobs externally.  
Added 'shift delay' trick so that 32nd notes can be achieved (using another channel).

### **FruityLoops Pro 1.3.56 (01/08/98)**

Stretching now in realtime.  
Pitch for each dot added.  
Added bottom status/resize bar.  
Edit mode buttons added (Pan/vol & Keyboard modes).  
Main pitch slider added.  
Old way to set dot volume removed.  
Added channel selection.

Added piano keyboard.  
Added graph edit.  
Humanize on pitch & mix.  
Script to customize the skin (colors, holes & positions).  
CTRL+left click on any set button for a quick preview of the sample.  
Added a BW skin that looks good & works almost well with palettized systems.  
CTRL to transpose (keyboard mode).  
Dots window added.  
Shows CPU usage (sample settings).  
Replaced the old echo by a useful one.  
Inverted the pattern numpad to match the keyboard one.  
Preview in wave open dialog.  
The selected channel gets the sample directly from FastWAV (double click).  
PlayList window can now be resized. Also the /\* keys change the playing pattern.  
Dot pan, dot note, mix effect & random now work with MIDI too.  
Corrected bug in the precalc resonant filter.  
New playlist that allows multiple patterns at the same time.  
Stereo delay & phaser effect added.  
Wider range for the delay volume wheel.  
Auto trim silence at the end of samples not to have to mix it (faster).  
Realtime resonant filter added.  
Starting sound.  
Various bugs corrected.

- 1.2.13 (not released)** Attack added.  
Favorites in wave open dialog.  
MIDI bank selection stuff corrected.  
Added MIDI controller settings.  
Auto-close FastWAV.
- 1.2.12 (01/06/98)** Bug that caused the echo to cut the sample itself corrected.  
Added Ins/Del buttons in playlist. Also right clicking on the left part selects the pattern too.  
Bug with the 6 numeric key sending minus corrected.  
Added preamp & decay precalc effects.  
Sample settings window rearranged.  
MP3 decoding added then removed (see below)...
- 1.2.11 (20/05/98)** WinAMP DSP plugins support (registered only).  
Unregistered version now limited to 4 channels.  
Humanize now in percents.  
Panning for each dot.  
New way of setting dot pan & vol (SHIFT).  
Humanize pan too.
- 1.2.10 (02/05/98)** Will loop the existing patterns if playlist empty instead of playing the first one.  
Right clicking a channel mute button for 'solo'.  
Loop comments are now in Rich Text format (RTF).  
Warning message when no output driver selected.  
Minor bugs corrected. Should be more stable. I hope.  
Close DirectSound when losing focus so most wave editors can run.  
Added preview in the settings form.  
Stretching to fit the pattern. Precalculated & rather slow.  
CTRL key to adjust the volume of a whole line.  
Note window has merged with the channel settings form.  
More accurate wheel movement (right click).  
Samples now support panning.
- 1.2.9 (19/04/98)** Minor bug on the small volume wheel corrected.  
Tried to 'attach' FastWAV to the main window.  
Main window position saved & restored.

Keyboard keys to mute channels.  
Scope mute button bitmap now loaded (skins).  
Corrected another bug that made samples not to be found sometimes.  
Added tips of the day. Hope they will be read :)

**1.2.8 (15/04/98)**

Can now drop FLP files on the main window.  
Bugs corrected in the saving of FLP files.  
Humanize added.  
Sync to input bug corrected.  
MIDI/Samples menu option added.  
Settings box shown when no output selected.

**1.2.7**

Channels volume/mute & main volume/shuffle now in the main window.  
Loop settings menu removed.

(previous versions were MIDI only beta releases)