

Operation Manual

RapidComposer

Music Prototyping At Its Best

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Introduction

What is RapidComposer?

RapidComposer is a unique, non-destructive, parametric phrase-based music prototyping software with VSTi and SoundFont support. You can read more about the features, view screenshots and tutorials on <http://www.musicdevelopments.com/>

RapidComposer is similar to a digital audio workstation (DAW) with the following differences:

- notes are not absolute but parametric, which means they are relative to the chord notes on the master track, and the current scale. It is possible to convert between the absolute and parametric form.
- notes are handled in groups called phrases. Phrases can be moved, transposed and scaled using the mouse. Ghost copies of phrases can be created.
- not only phrases but phrase generators can be added to tracks.
- all transformations/variations/controllers are non-destructive. E.g. if you move the 'Strumming' slider in the Strumming controller added to a track, you can see the notes moving left and right. Most parameters are envelopable.
- the composition layout (verses, lines) is displayed as tabs and can be freely edited. It is possible to insert or repeat a line or verse.
- RapidComposer is not meant for mixing and mastering. When you finished composition you will need to import your work into your favourite DAW and do the mastering there.

Description of tools, phrase generators, variations and their parameters are not found in this document. Help is built into the application about all topics that are not covered here.

About the program editions

The documentation covers two program editions; RapidComposer and RapidComposer LE. Both editions include a standalone and a VST version.

RapidComposer vs RapidComposer LE

The LE edition is aimed at serious hobbyist musicians and composers at an affordable price. It contains the same features as the full version with the following exceptions:

- There is no articulations support. The full version supports articulations for phrases or individual notes.
- IdeaTool is removed so one cannot generate a multitrack composition with RapidComposer LE.
- One tempo can be assigned for the whole composition.
- Phrase morphing is missing from the LE edition.

RapidComposer LE owners can easily upgrade to the full version of RapidComposer at a significant discount.

Standalone vs VST version

You can use the VST version inside your host/DAW. The VST version differs from the standalone version in the following points:

- accessing audio and midi interfaces missing. The VST version sends MIDI events to the host, that are usually routed to an instrument track. The VST plug-in does not deal with audio and MIDI interfaces.
- VSTi plug-in handling was removed. This is the task of the host application.
- you can still use soundfonts but for preview only. The preview audio is rendered on the audio output of the RapidComposer VST plug-in.
- the Instruments browser is not available.
- the transport controls are missing. All transport changes are initiated inside the host application. There is no way for a VST plug-in to send transport events to the host, or set the playback position itself for good reason.

Each host has a different way of loading VST plug-ins. Please study the manual of your host for details on how to load a VST plug-in and how to route the MIDI channels from the plug-in to virtual instrument tracks.

The RapidComposer VST plug-in is able to handle **128 output MIDI channels** that can be assigned to tracks. Since a VST plug-in can output only 16 MIDI channels, you need to add a new VST instance for each 16 channels, and by setting the preset (“Channels 1-16”, “Channels 17-32”, etc) RapidComposer will know which 16 channels it should send to the host. This way you can use the same editor window all the time with all the tracks, that are directed to the host through several plug-in instances.

As an example: add RapidComposer as a virtual instrument track to your host. Preset “Channels 1-16” is selected automatically. When you need to output more than 16 channels, you add another RapidComposer instance, a new virtual instrument track, and select preset “Channels 17-32”. That is so easy. Please note that the same RapidComposer window will open regardless which plug-in instance editor you open.

Installation and Activation

System Requirements

- Supported operating systems: Windows XP/Vista/7 (32-bit or 64-bit)
- Intel/AMD processor 1.4 GHz minimum
- At least 512 MB RAM
- Horizontal resolution of at least 1280 pixels (1600 pixels or higher is recommended)
- Windows MME or DirectSound compatible audio hardware is required (ASIO compatible audio hardware required for low-latency operation)
- Internet connection required for license activation
- VST host is required to use the VST version

Installation And Uninstallation

The setup file automatically installs RapidComposer into the "Program Files" or "Program Files (x86)" directory. The data and settings files are installed in the "AppData/Roaming/RapidComposer" directory. This is because Windows UAC does not allow any software modifying its own files in the "Program Files" directory. It is possible to copy the contents of "AppData/Roaming/RapidComposer" to "Program Files/RapidComposer" when UAC is turned off (or on Windows XP).

During the installation neither DLL files nor services are installed in the Windows system directories.

Uninstalling the application can be done either by selecting "Uninstall RapidComposer" in the Windows Start/All Programs/RapidComposer menu, or from the Control Panel (select "Programs And Features"). Since the system is not changed in any way during the installation, you can also remove the directories without uninstalling the software.

The VST version is installed in the same directory as the standalone version. You need to move the VST version (with the .dll file extension) manually to your shared VST plug-in directory.

Activation And Deactivation

When first running RapidComposer, you will be asked to type the key code that you received upon completing your order. You need to have a working internet connection during activating the software. It is possible to manually activate the software on another PC, please contact our support for instructions.

Please note that the license is tied to your hardware. **Always deactivate the program before formatting your hddisk or moving RapidComposer to another PC.** Use the Deactivate button under the Settings/Misc tab.

You should perform the activation from inside the standalone version before being able to use the VST version!

Setting Up RapidComposer

MIDI Settings

Set MIDI input and output ports under the Settings/MIDI tab. The MIDI Out setting is optional, unless you have a hardware synth.

Note: usage of Microsoft GS Wavetable Synth is not recommended due to its extremely high latency that cannot be controlled by RapidComposer.

Audio Settings

Audio parameters can be set under the Settings/Audio tab. The audio API (ASIO, DirectSound, MME), the audio device, sample rate and buffer size (latency) can be set here. Not all sample rates and buffer sizes are supported by your audio hardware. If you select "Default" as the sample rate or buffer size for ASIO, the driver settings will be used.

Note: using ASIO is recommended as it has the lowest latency. If your sound card has no ASIO drivers, you can use the freely available ASIO4ALL driver.

VSTi Settings

VSTi plug-ins must be added first before they can be used inside RapidComposer under the Settings/VSTi tab. When you add a VSTi plug-in, an instrument definition file is created with the VSTi presets, if the presets are exposed by the plug-in.

Loading a VSTi plug-in is done differently from other VST hosts. You never load a VSTi plug-in yourself, but rather select an instrument for a track, and loading and setting up the plug-in is done automatically by RapidComposer.

Note: it is possible to save the internal state of a VSTi plug-in as an instrument even if the plug-in does not expose any presets. This is very useful when you later want to use the same sound. All you need to do is selecting the saved instrument in your tracks.

Soundfonts

SoundFont 2 rendering is built in RapidComposer. There are many high-quality soundfonts available both commercial and free. The advantage of using soundfonts for composition is that

- they are small therefore load quickly,
- no external software is needed to be loaded which jeopardizes the stability of the host application,
- presets can always be selected by RapidComposer (read the section below why it is important),
- and you can use your 40 GB sound library when mixing and mastering, for composing you don't necessarily need a huge library.

Under the Settings/SF2 tab you can add new soundfonts to use in RapidComposer. In the standalone version soundfonts can be used for preview and for track instruments. In the VST version soundfonts can be used only for previewing chords/scales/phrases. The soundfonts are rendered to the audio output of the VST plug-in.

The Concept

The following sections are important in order to understand the concept of RapidComposer. Please read them carefully.

Phrases And Operations

The composition in RapidComposer is phrase based. A phrase is a collection of notes that lasts for a few beats (typically 1 or 2 measures). Notes in the phrase are relative to chord notes. Conversion between absolute and relative (parametric) form is possible anytime (Right-click on a phrase to open the context menu).

Basically you can create phrases

- by recording what you play on your MIDI keyboard. Select a track and press MIDI REC. If you need a metronome track, press 'A' then 'M'. What you record will be put in a phrase. There are various options for converting the recorded phrase. You can use the chords on the master track, or analyzing your recording and overwrite the master track chords. Or just leave your notes absolute notes.
- by manually editing one. You can preview the edited phrase using any chords for how it will behave with that chord.
- by generating one with one of phrase generators.

Once you have a few phrases to work with, there are many things you can do with them or modify them in a musically useful way:

- adding a phrase to your composition: either drag and drop from the Phrase Database, or open the track context pop-up (Right-click inside the track) and choose 'Add ...' to add the currently selected phrase
- filling a track (line/verse or the whole composition) with your phrase (Right-click inside the track, select 'Fill...').
- you can drag the phrase with your mouse, you can see it changing depending on the master track chords
- you can resize your phrase by dragging the top right corner using any of the 4 resizing modes (scale, repeat, sustain, regenerate).
- you can transpose the phrase by moving it vertically with the mouse in 2 different ways: transpose notes or whole phrase.
- you can replace the phrase with one click. If you select phrases in the composition, one click in the phrase database will replace them all.
- you can add variations to phrases (either manually or with the Variation Tool). If more than one variations are added to a phrase or track, variations are rendered one by one, first the first variation is applied, then the second variation, etc. There are variations that changes the rhythm, others change the order of notes, doubles the phrase or mirror it, the possibilities are endless.
- you can add controllers or variations to tracks. They are actually the same with different names: they both process phrases. In this case first the phrase is rendered, then any phrase variations, then the track variations.

Representation Of Notes

It is important to understand the way notes are represented in RapidComposer in order to work efficiently. While other applications work with absolute notes, RapidComposer does not do that. Instead notes are relative to the current chord and scale notes. E.g. a midi note is stored as "lowest chord note plus one scale note" or "second chord note minus 2 semitones" or "bass note minus 12 semitones" rather than just the number 60 (for C4). The consequence is that phrases can conform to any chords and scales! A recorded or edited phrase can be reused with any chords. When you look at the phrase editor you can see the parameters written in the notes.

You can move and edit notes directly inside the tracks; there is no need to open the phrase editor by doubleclicking on a phrase.

These are the explanations for the various options:

Note Kind	A note can be either Chord note (=relative to one of the chord notes), Bass note (=relative to the bass note) or Absolute note
Note Index	Specifies one of the chord notes. The lowest chord note is index 0, the second note is 1, the third is 2, etc. Negative indexes mean offset from the highest chord note (-1=highest) or chord notes can be cycled depending on the options
Note Offset	offset added to the note in scale notes, semitones or semitones sanpped to scale
Note Offset Unit	It can be one of scale notes, semitones or semitones snapped to scale. The latter means that after adding a number of semitones, the nearest scale note is chosen around the note
Options	Specify what happens when the index is higher than the number of chord notes. E.g. for a Major chord indexes 0,1,2 are valid notes. A note with index 3 can be silent or it can be the lowest note (index 0) transposed up by an octave. You can also specify how negative indexes are handled. -1 can be the highest chord note transposed down by an octave, or the highest chord note without transposition
Note Accent	the stress level can be Strong, Medium or Weak. The accents are converted to Note On velocity by the Expression Controller in the track. This way you can better control the accents and rhythm, especially if you set up envelopes for the different accents (rhythm morphing). Alternatively MIDI Velocity can be specified (0 to 127)
Articulation	Articulation applied before sounding the note

When you move the notes with your mouse, the best parameters are assigned to the note by a complex algorithm. You can of course override these values if you want.

Phrase Rendering

The phrases are rendered in the following steps:

1. First the phrase is generated if it is a phrase generator.
2. The current chord and scale is assigned to the phrase.
3. Phrase variations are applied to the phrase one after the other. The order of the variations is important.

4. Track controllers and variations are applied to the phrase. The order is important.
5. Notes are rendered to absolute notes as the last step.

For example if you add the Swing variation to the phrase, every second and fourth beat of the phrase will be delayed. However if you add it to the track, Swing will be applied to all phrases in the track.

Chords And Inversions

It is possible to define new chords, sort and group chords by selecting the 'Chords' tab in the middle pane. Note that existing chord definitions can also be modified or removed. The abbreviations are important; they are used to recognize chords.

When specifying a chord in a structural unit, the base note, an optional octave for the base note (-1 to 9), the chord name, optional bass note, and optional inversion must be provided. The inversion is described by a formula that contains octave offsets for the chord notes, separated by semicolons. As an example:

C4 Major [1;1;0] means that C4 and E4 is transposed up by an octave, so the chord consists of G4,C5,E5 (second inversion traditionally).

Note that for a chord note several transpositions can be specified separated by a comma. E.g.

C4 Major [-1,0;0,+1;0] means the C3,C4,E4,G4,E5 notes.

Articulations

Articulation refers to the direction or performance technique which affects the transition or continuity on single note or between multiple notes. MIDI controller and articulation definitions are stored in editable text files (.rcCTRL) in the AppData/Roaming/RapidComposer/DB directory. Articulations are a combination of key switch and/or a custom midi control change message. It is possible to assign an articulation for individual notes or a whole phrase. Before that please make sure that the track should have a controller set and articulation set already specified.

If an articulation is assigned to a phrase, the keyswitch/midi controller messages are sent right before the first note of the phrase. Phrase articulations can be set in the phrase inspector in PHRASE editing mode.

Note articulations are set in the note inspector at the top of the workspace.

Articulation definitions are provided for several major sample libraries. It is not possible to add/change articulations from inside the application, though you can edit the .rcCTRL files or even create new ones. Please let us know if you need articulation definitions for a specific product.

Editing MIDI Controllers

To edit MIDI controllers in RapidComposer, first click on a track header and set a Controller Set. That is where the controller definitions are taken from. Next you should add a MIDI controller to the track. Click on the menu under the list of track controllers in the track inspector. Select a MIDI controller in the menu to add it to the track. Once added, you can make the controller become an envelope rather than a single value

for the track by clicking on the small icon in front of the controller name in the controller list. Right clicking inside the MIDI controller track will bring up the pop-up menu to select the editing tools and operations:

These are:

Create And Adjust Events	Create or set individual events. If there is an existing event under the mouse, it will be set, otherwise a new event will be created
Freehand Set Mode	Set existing events using freehand drawing without creating new events
Freehand Replace Mode	Create new events using freehand drawing using the Snap&Quantize option
Line Tool Set Mode	Set existing events by drawing a line without creating new events
Line Tool Replace Mode	Create new events by drawing a line using the Snap&Quantize option
Exponential Tool Set Mode	Set existing events by drawing an exponential curve without creating new events. Note that dragging direction influences the way the curve is drawn
Exponential Tool Replace Mode	Create new events by drawing an exponential curve using the Snap&Quantize option. Note that dragging direction influences the way the curve is drawn.
Curve Tool Set Mode	Set existing events by drawing a curve without creating new events
Curve Tool Replace Mode	Create new events by drawing a curve using the Snap&Quantize option
Scale Selection	If you have a selection (see below) you can multiply the controller values with the mouse pointer value. The mouse pointer value is 1.0 where you click and changes as you move the mouse vertically. If there is no selection, all the values are affected
Offset Selection	If you have a selection (see below) you can add the mouse pointer value to the controller values. The mouse pointer value is 0.0 where you click and changes as you move the mouse vertically. If there is no selection, all the values are affected

Selection can happen in two ways. You can select a time range (Shift+drag), or time range and value range (Alt+drag). To have smooth edges at the borders - to have those events gradually less affected - release the Shift/Alt key during dragging, and repress it at the right side of selection.

Note On Velocity can be edited only in NOTE editing mode. Select NOTE editing mode, and right click on the track header and select "Note On Velocity" from the pop-up menu to display Note On Velocity. You can set existing events using the tools described previously.

Instruments

All presets are available in the instrument database where additional info can be provided about the usage and function of each preset, and user-defined tags can be assigned to them. For example if you set up an instrument to use acoustic guitar chords, when selected in a track, the track will automatically use guitar chords. There are various display/sort/group/filter options to customize the presentation of presets. All the presets are in one list regardless of their origin.

Instruments and presets are stored in editable text files (.rcINST) in the

AppData/Roaming/RapidComposer/DB directory. The name, kind, and MIDI program number is specified here as well as optional attributes like category, function and whether to use guitar chords. With the exception of "kind", "_file" and "_program", all the attributes can be edited inside RapidComposer. Note that MIDI Bank Select can be used when needed: use "_midibankmsb" and "_midibanklsb".

MIDI

Only General MIDI (DB/GeneralMIDI.rcINST) and General MIDI Percussion (DB/GeneralMIDIPercussion.rcINST) is included with the application. If you have a hardware MIDI synth, we can help you to create the instrument preset file, please contact us.

SoundFonts

Please read the Soundfonts chapter for how to set up soundfonts.

When you add a new soundfont under the 'Settings/SF2' tab, the instrument file is automatically created for the added soundfont, and you are ready to use it immediately. Note that the best practice is to use soundfonts with a single preset. Reverb and chorus can be enabled or disabled and there is a global soundfont gain on the Mixer panel. If there is a problem with relative volume of different soundfonts used, add the "MIDI Volume" controller to the track, and you can set the volume there.

VSTi

VSTi v2.4 plug-ins are supported. When you add a new virtual instrument under the 'Settings/VSTi' tab, the instrument file is automatically created. If the plug-in is able to handle multiple MIDI channels, you can make RapidComposer load it only once, and use separate MIDI channels for the tracks using the plug-in presets. In this case use the "Add With Options..." button and select "Plug-in handles multiple MIDI channels".

IMPORTANT: instrument/preset selection is different from doing it in a DAW. In a DAW you load the plug-in, then assign it to tracks, set MIDI channels, then select a preset inside the plug-in window. In RapidComposer you just select a preset and everything else (loading plug-in, setting MIDI channels, selecting a preset) is done automatically. This requires that the host should be able to select a preset in the virtual instrument. This can happen

- by selecting a VST preset exported by the plug-in, or
- by sending MIDI Program Change messages to the plugin.

There is no third option! If the plug-in does not expose its presets, the host will not be able to select a preset. You can still use such plug-in by selecting the single VST preset that it exposes, then open the plug-in window and select a preset there. The plug-in state is saved with the composition, so the selected preset will not get lost. However RapidComposer will not be able to select a preset by itself in the Idea Tool.

Audio Tracks

It is possible to add audio tracks to the composition by selecting "Add Audio Track" or by pressing 'U'. Once there is an audio track in the composition, you can import audio by right clicking inside that audio track and selecting "Import Audio..." from the pop-up menu. Only WAV and AIFF files can be imported with 16-bit mono or stereo audio. The sample rate is converted automatically into project sample rate. The imported audio is put into a container which you can move and copy. The audio track has a "Gain" controller, so you

can alter the volume, even using a volume envelope is possible. The audio track support is basic as audio editing is not the purpose of this application.

The User Interface

If you ever used a DAW you won't have any difficulties using RapidComposer. The software assumes a basic knowledge of music theory.

The user interface is divided into 3 panes:

- The left pane is for inspectors of the currently selected object but you can also find file import/export, settings and tools here.
- The middle pane is where the browsers for chord/scale/etc databases reside.
- The right pane is where you edit the composition, phrases and chord progressions. The Idea Tool, the mixer, the midi importer and the history are here too.

You are advised to use the pop-up help windows (also known as tooltips) which contain more details than this manual does. If you leave the mouse on any user interface elements, a small window appears with explanation after a few seconds. You can enable and disable this feature in Settings/Misc.

Keyboard Shortcuts

Use these shortcuts without pressing the Ctrl/Shift/Alt key unless stated otherwise!

A	Add track using the currently selected instrument
U	Add audio track
S, Ctrl-S	Save composition
D	Deselect all phrases and notes in all tracks
P	Enable/disable phrase and note preview
H	Fill currently selected track with master track chords
M	Fill currently selected track with metronome clicks
Z	Undo last change in composition
Y	Redo last change in composition
1	Hide/show inspector (leftmost) panel
2	Hide/show browser (middle) panel
Tab	Toggle phrase/note editing mode
Enter	Start playback
Space	Stop playback
Delete, Backspace	Delete selected phrases/notes (in composition) or selected notes (in phrase editor)

