NCH Software
TwelveKeys Music Transcription Software

This user guide has been created for use with

TwelveKeys Music Transcription Software Version 1.xx

Technical Support

If you have difficulties using TwelveKeys Music Transcription Software please read the applicable topic before requesting support. If your problem is not covered in this user guide please view the up-to-date TwelveKeys Music Transcription Software Online Technical Support at www.nch.com.au/twelvekeys/support.html.

If that does not solve your problem, you can contact us using the technical support contacts listed on that page.

Software Suggestions

If you have any suggestions for improvements to TwelveKeys Music Transcription Software, or suggestions for other related software that you might need, please post it on our Suggestions page at www.nch.com.au/suggestions/index.html.

Many of our software projects have been undertaken after suggestions from users like you. You get a free upgrade if we follow your suggestion.

TwelveKeys Music Transcription Software

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Introduction

Thankyou for using TwelveKeys. TwelveKeys is a program designed to assist in transcribing recorded music. It is capable of accurate note detection on polyphonic (multi note/instrument) recordings and is simple and intuitive to use. To get the most out of TwelveKeys and start transcribing music sooner, please read this manual in full.

Getting Started

Assuming your installation of TwelveKeys has completed with no errors, you are now ready to start transcribing tracks. The first thing you will have to do is load in a track you wish to transcribe.

- Double click on the TwelveKeys icon to start the program.
- In the toolbar panel of the TwelveKeys screen click the Open icon.
- You will now need to select a file to analyse. TwelveKeys is capable of loading and displaying various audio format files, but to get the best results we recommend you use files recorded at 16kHz in .wav format. You can easily convert your existing recordings using Switch Sound Format Converter.
- Select the recording you would like to display and click Ok.

Once the file loads you will see the wave form of the recording in the top panel. The main (centre) panel is where the pitch analysis is displayed. Depending on the size of the file you are transcribing TwelveKeys may take a minute or two to completely load the file, but you will be able to commence analysing the start of the recording immediately. The portion of the file that has not been loaded yet is marked with grey. You can see what percentage of the file has loaded by looking at the bottom left hand corner of the status bar. As the recording loads the frequencies will be drawn on the main panel. These frequencies correspond directly to the notes displayed on the keyboard at the bottom of the screen. Click on play to commence playing the recording. You will be able to hear the recording while watching the notes scroll past.

You can now proceed to the next section of the manual to learn how to read this graph in greater detail and utilise some of the other features of TwelveKeys.

Reading the Graph

The main panel of the TwelveKeys screen is where the frequencies of the recording you are analysing are graphed. The horizontal axis of the graph represents pitch, and the vertical axis represents time. Each mark drawn on the screen represents a frequency present in the recording at that particular point in time. So a long, vertical line is likely to represent a sustained note in the recording. The colour and intensity of the marks represent the volume. Loud notes are brighter whereas quieter notes are more faint.

Determining which notes are being played is as simple as lining up the marks with the keys on the piano keyboard at the bottom of the screen. Alternatively you can move your mouse over the marks and the display in the bottom panel will indicate what note you are hovering over. Gridlines can optionally be displayed by right-clicking on the display and selecting "Show Note Lines", or enabling the feature from the options dialog.

When you press play you will hear the recording being played as well as see the graph scroll down the screen. As the marks pass the front edge of the keyboard you will hear them played in the recording. You can think of the front edge of the keyboard as the cursor of the graph. You can press on the keyboard as the notes pass to get a feel for how the graph works. To accurately measure the timing of notes on the display, hover the mouse over the time axis to show a cursor and timestamp.

Transcribing a Recording

Now that you know how the graph works you can start transcribing your first recording using TwelveKeys. This page contains some useful tips for effectively transcribing a song.

When you first load a recording into TwelveKeys the graph produced may seem complex and little overwhelming. But by tweaking the settings and a little practice it will start to make sense to you in no time.

The first thing you should do once you have loaded a track is to adjust the gain control. This is the slider on the bottom panel. It will assist in emphasising the strong notes and diminishing the softer notes.

Next, start playing the song and watching the graph. You can help identify the notes you are trying to transcribe by using the keyboard to match the marks on the graph.

If you are having trouble picking out notes in a fast part of the song, then try slowing the track down using the Speed slider. This will slow the track down without altering the pitch of the notes being played.

You may notice that sometimes the graph indicates that there are more notes being played than you can actually hear. What you are seeing are harmonics. When a note is played on an instrument such as a guitar, the instrument produces a fundamental note. This is the main note you hear. It also produces several other higher notes called harmonics. These harmonic overtones help to give instruments their individual characteristics. TwelveKeys tries to reduce suspected harmonics but is not able to completely remove them. Using the keyboard here is a good way to identify which of the notes you are seeing is the fundamental.

Controls

There are various controls which you can use to assist in analsying a recording.

Playback Controls

Play

Commence playing the recording you have loaded in to TwelveKeys. You can also use the spacebar to toggle playback.

Stop

Stop playing the recording you have currently loaded in to TwelveKeys. You can also use the spacebar to toggle playback.

Start

Click on this button to return to the start of the recording. If you have set a loop on the recording then you will return to the start of the loop. Shortcut key: Home

Rewind

Rewind the recording. You can alter the speed of rewinding and fast forwarding by adjusting the sliders in the TwelveKeys Options dialog. Shortcut Key: Left

Fast Forward

Fast forward the recording. You can alter the speed of rewinding and fast forwarding by adjusting the sliders in the TwelveKeys Options dialog. Shortcut Key: Right

Scrub

When you put a recording into scrub mode you will be able to hear the exact part of the recording you are on even though the recording is not playing. Scrub can be useful if you want to pause on a particular section of the recording but still hear what is happening underneath. Shortcut Key: Control + Spacebar

Loop

Select this menu option to enable or disable looping. You can access the loop controls by right clicking on the graph. To specify a region to loop, right click on the graph and select your start and end points. You should see two bars indicating the loop region. Shortcut Key: L

Menu

TwelveKeys ==> Open

Open a recording from a browseable location on your computer.

TwelveKeys ==> Load CD Track(s)

You can directly load a recording from a CD into TwelveKeys. If you would like TwelveKeys to automatically download track information for you then make sure you have the Use Free CDDB option selected in the TwelveKeys Options.

Controls ==> Loop, Play, Stop

These menu items are the same as the buttons at the bottom of the screen. Please read the above section for details on how they work

Keyboard

You can click on the keyboard to hear that corresponding note. This is useful in identifying which marks on the pitch analysis screen correspond to the instrument or voice you are transcribing.

Below the main panel there is a tuning slider. You can tune the keyboard up and down to help fit songs which may be recorded at slightly lower or higher pitches than the standard. TwelveKeys' tuning defaults to A440 (A = 440Hz).

Gain

The gain slider can be used to boost or cut the intensity of the colour display. The highest volume notes will appear with the foreground color, with quieter ones fading into the background color. These colors can be changed by right-clicking on the main window or using the options dialog. Moving the gain slider has an instant effect on the graph.

Speed

You can modify the speed of playback without affecting the pitch of the notes being played. This can be particularly useful for sections of music where there are many rapid notes. Adjust the slider to the speed you would like to hear the recording at.

Volume

Next to the playback controls are a volume slider, DB display meter and a clock indicating the current playback position.

Options

General

Use the Free CDDB

If you check this option then TwelveKeys will automatically attempt to download track information from an online database when you load tracks from a CD.

Fast Forward Speed

Changes how quickly TwelveKeys will fast forward a recording

Rewind Speed

Changes how quickly TwelveKeys will rewind a recording

Sound output device

Change which device sound will be played through

Show format warning

Change whether you would like to be alerted when using formats TwelveKeys is not optimized to use. i.e. Not 16khz .wav

Pedals

If you have a supported USB or serial foot pedal then you can attach it to your computer and use it to control the playback functions of TwelveKeys. To enable foot pedal support simply check the enable foot pedal control check box. Then select your pedal from the list and number of pedals. You will then need to configure your foot pedal, so click on the Configure Foot Pedal button and follow the on screen instructions. If you make a mistake during this configuration process then click cancel and start again.

Display

Display Notes on the Keyboard

Check this box if you would like TwelveKeys to print the name of each note on the keyboard. The setting can also be changed by right-clicking on the keyboard

Show wave window

Check to show the waveform of the file at the top of the window. The waveform can be hidden by right-clicking on it.

Show time axis

Check to show the time axis on the left of the window. The time axis can be hidden by right-clicking on it.

Show note lines

A grid of lines lining up with the piano keys will be displayed on the main panel. This allows you to easily see where the frequencies of the recording you are analyzing are and determine which notes are being played.

Highlight note

Allows you to move your mouse over the piano keys and the display in the main panel will indicate what note you are hovering over.

Set Foreground and Background colors

Click these buttons to change the foreground and background colors of the main panel. These colors can also be changed by right-clicking on the panel.

Shortcut Reference

Load   Ctrl + O

Load CD Tracks   Ctrl + L

Start/Stop   Spacebar

Scrub   Control + Spacebar

Fast Forward   Right Key

Rewind   Left Key

Toggle Loop   L Key

Seek to Start   Home Key

Help   F1

Exit   Alt + F4

Getting the Most out of TwelveKeys

Recording Format

TwelveKeys can handle most popular recording formats, but the clearest results will be obtained by using recordings made in .wav format. Ideally this recording should be recorded at 16,000Hz. TwelveKeys will warn you if your files are in the incorrect format. You can convert your files with a product such as Switch, which can be downloaded from http://www.nch.com.au/switch/index.html

Foot Pedals

Adding a foot pedal is a highly recommended way to enhance your experience with TwelveKeys. A foot pedal enables you to keep your hands free to play an instrument or transcribe notes while still having control over the playback. You can purchase a supported foot pedal from http://www.nch.com.au/hardware/index.html

Settings

Each recording is different. Recordings have a varying number of instruments and are produced in different ways. To get the clearest result you will need to adjust the gain, zoom and sensitivity settings.

Keyboard

If you notice that the notes of a recording are slightly off-centre, you can tune the keyboard using the tuning slider below the main panel. This will help you to get a better match to the notes.

Orientation

TwelveKeys can be used in either a vertical or horizontal orientation. Right-click on the display and select "Switch Orientation" or use the options dialog to select an orientation you are most comfortable or familiar with. Vertical mode will have the music scroll down the screen, whereas horizontal will move the music from right to left.

Colors

You can select foreground and background colors to your liking. Simply right-click on the display, select a color option and choose a color from the color picker. This may also be done from the options dialog.

Support

You can contact NCH Swift Sound for support at http://www.nch.com.au/support/index.html .

You can also get developer and community based support from the TwelveKeys forum page at http://nch.invisionzone.com/index.php?showforum=5

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Screen References - Advanced Recording Options

Automatic Recording

The recording can be automatically started when either the Record Control dialog is opened or when the audio to be recorded reaches the threshold level. Additionally any quiet periods at the start and the end of the recording that is below the threshold level can be trimmed.

Auto Start Recording

The recording will automatically start when the Record Control dialog is opened, you will not need to select the record button.

Auto Trim Recording

Trim the recording to remove any quiet periods from the start and ending of the recording. Use the threshold slider to specify the cutoff level. Voice Activated Recording

Automatically start the recording when the audio level reaches the threshold.

Threshold:

Use the slider to set the threshold level for the recording. Used for both the auto trim and the voice activated start.