MidiYodi

2.0

User Guide

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1 OVERVIEW

MidiYodi is an application that allows MIDI files to be played, examined and edited.

The application includes the following features:

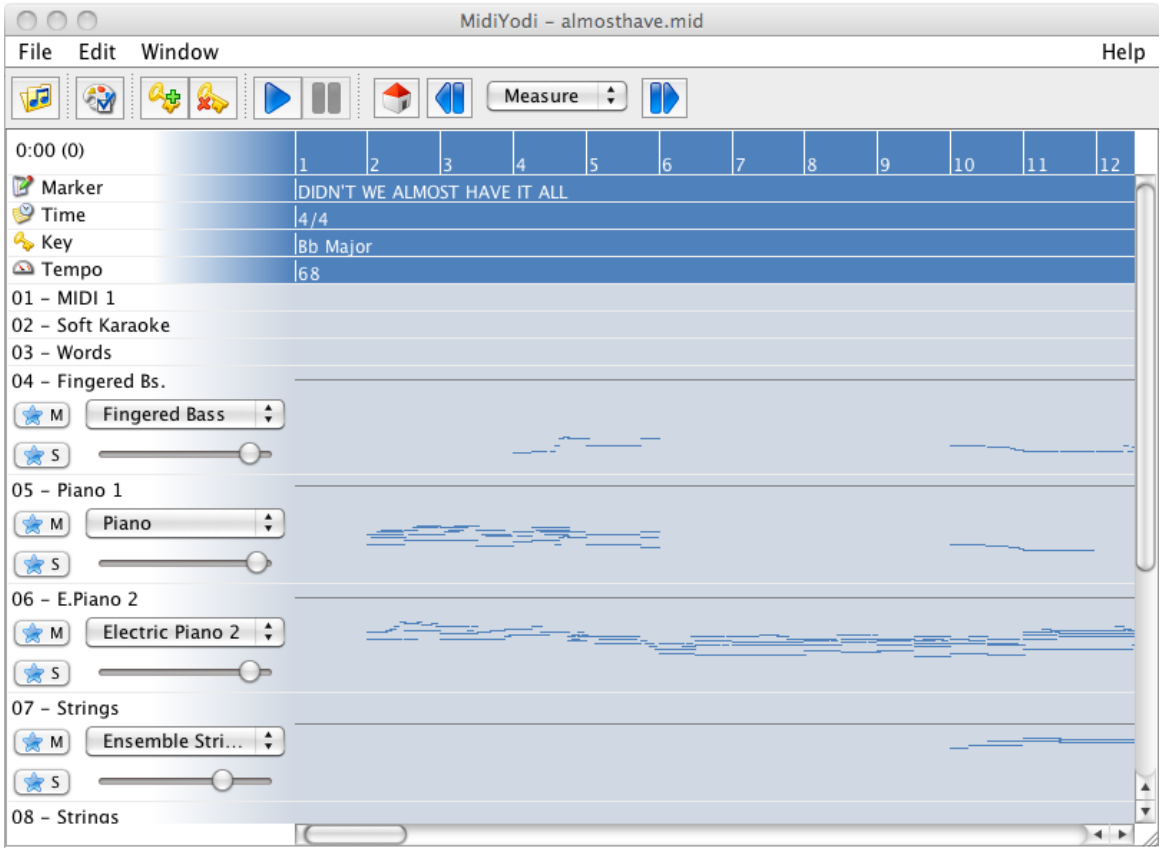
- MIDI File Explorer
  Scans entire folders for MIDI files and displays information such as available instruments, song duration, tempo, key- and time signatures for each file prior to selecting a specific file for detailed examination in the main view.
- File and Tracks Overview
  Displays the contents of a MIDI file including a beat bar, a meta message area and all its tracks. The meta message area displays messages for markers, tempo, time signature and key signature settings. Each track displays miniature 'notes', their duration, instrument and a volume curve. Tracks can also be soloed or muted.
- Playback and Controls
  Playback controls to start and pause playback in a tape recorder fashion. Navigator controls to jump to the beginning of a song or to the next/previous beat, marker, tempo change, time signature change or key signature change.
- Instrument & Volume Change
  Each track containing notes can have its instrument and volume changed.
- Solo & Mute
  Each track can be individually solo'ed or muted. Muted tracks can be removed from the song.
- Transposition
  The song can be transposed in half-tones up or down.
- Keyboard Examiner
  Displays all notes and their durations for a track in a keyboard like viewer. For precision or overview, beat width and note height can be altered.
- Score Examiner
  Displays all notes and their durations for a track in a score like viewer. For precision or overview, beat width, note height and octave can be altered.
- Event Examiner
  Displays all events for a track including event position (tick and time), category (meta, channel or system exclusive), status (note on/off, program change etc).
- Customization
  Customization of default examiner (displayed when a track is double-clicked), color theme, language and MIDI out device.

2 MAIN WINDOW

When MidiYodi is started the Main window is displayed. The Main window allows opening MIDI file where files of type 0 and type 1 are supported.

Once a MIDI file has been opened the Main window contains the following areas.

- Menu and Toolbar
- Beat bar
- Meta message area
- Tracks area



2.1 Menubar

The menubar contains menu items as described below.

File menu

MIDI File Explorer Displays the MIDI File Explorer where a file can be located and selected or entire folders can be examined for MIDI file contents.

Save	Saves the current MIDI file into the original file. *License constraints: In the trial version saving files is disabled.*
Save As...	Same as the **Save** option but saves the MIDI contents into a new file.
Trackify	Groups MIDI channel messages on separate tracks. This feature is useful on MIDI files of type 0 if one wants to be able to examine and control each channel. The trackify process will use a first track for MIDI messages not bound to channels such as *meta* messages and then one track per represented channel.
Exit...	Closes the MidiYodi application.

Edit menu

Preferences...	Displays the **Preferences** dialog described in chapter 2.6.
Transpose Up	Transposes the MIDI song one half tone up.
Transpose Down	Transposes the MIDI song one half tone down.
Remove Muted Tracks...	Removes all tracks that are currently muted.

Window menu

Keyboard Examiner	Displays a **Keyboard Examiner** for each selected track where notes can be examined in a keyboard like view. See chapter 4 for details.
Score Examiner	Displays a **Score Examiner** for each selected track where notes can be examined in a score like view. See chapter 5 for details.
Event Examiner	Displays an **Event Examiner** for each selected track where all messages contained within the track can be viewed. See chapter 6 for details.
Auto Scroll	Determines if the beat area and track view area should automatically scroll to follow playback. The selection applies for the Keyboard end Score examiners as well.

2.2 Toolbar

The toolbar holds shortcut buttons for some of the menu items. In addition it contains playback and navigation buttons to start- and stop playback and for positioning playback at the beginning of a song or at previous- or next beat, marker, tempo change, time signature change or key signature change.

2.3 Beat Area

Below the toolbar follows a position indicator that displays the duration and on what tick mark within the song the playback is currently located. Each message within a MIDI file is associated with a specific tick position. (The indicator can be used together with the **Event Examiner** which lists the tick position for each message within a track.)

Next follows the beat area containing beat marks and beat numbers for the beats within the song. Clicking anywhere within the beat area will move playback to that position.

A black line indicates where playback is currently positioned.

2.4 Meta Message Area

The meta message area displays some of the most useful meta messages from the MIDI file. Note that none of these messages are mandatory within a MIDI file.

The displayed meta messages include:

Marker messages that contain any kind of informational text made by the author. If no marker messages are present in the MIDI file the text *Not available* is displayed.

Time signature messages that displays time signature settings. If no time signature messages are present in the MIDI file, 4/4 is assumed suffixed by the text *(Defaulted)*.

Key messages that displays key signature settings. No default key is assumed if no key messages are available.

Tempo messages that displays tempo settings. If no tempo messages are present in the MIDI file, 120BPM is assumed suffixed by the text *(Defaulted)*.

2.5 Tracks Area

The track area contains a list of all available tracks within the MIDI file. (MIDI files of type 0 only have one track but may be trackified by MidiYodi.)

Each track contains a track control panel to the left and a track overview area to the right that holds a scrollable view port containing notes and volume.

2.5.1 Track Control Panel

The track control panel comes in two shapes depending on if the track contains any notes.

Each track displays a track number and a track name. If the track lacks a track name message then it is defaulted to MIDI X where X is a sequence number.

For tracks containing notes the first instrument (program change message) is selected in a combo box. Selecting another instrument in the combo box will play the track using the new instrument. If no instrument is defined within the track the default instrument *Piano* is used.

Buttons are available for soloing or muting the track in addition to a volume slider. If the volume is changed the volume for the complete track is set to the new value. Thus if the track originally contained volume changes like a fade-in then these changes are not adjusted but completely replaced which in effect will remove the fade-in.

2.5.2 Track Overview Area

The track overview area displays miniature notes for all notes within the track. It also displays a gray volume curve which will be adjusted if the volume slider is adjusted.

A track can be selected by clicking on it or multiple tracks be selected if the *Shift* key is pressed while each track is clicked. Selecting tracks is necessary if they should be examined using the Keyboard, Score or Event examiner.

Double clicking on a track will show the track in the default examiner, defined in the **Preferences** dialog.

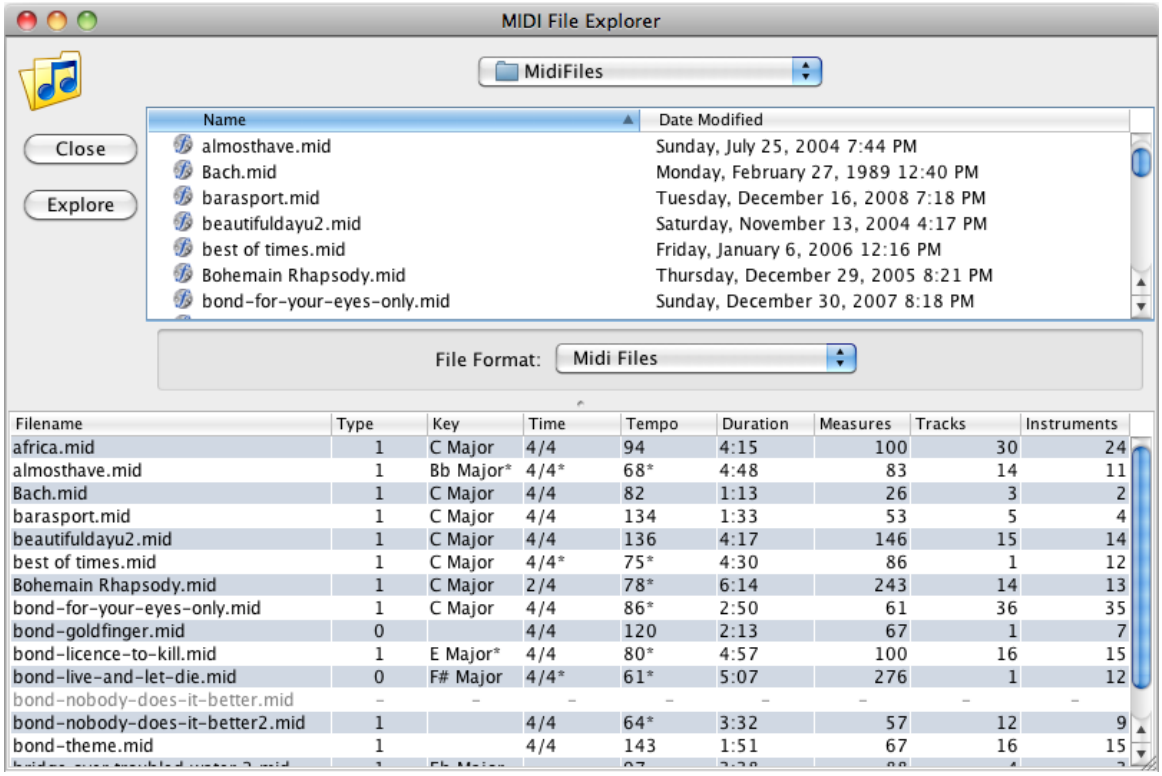
2.6 Preferences

The **Preferences** dialog allows customization features that are saved between invocations of MidiYodi. The settings are stored in a file named `midiyodi.xml` in the current user's home directory.

Default Examiner	The examiner to be displayed when a track is double clicked.
Theme	Color theme that is used for tracks and marker areas as well as in the displayed lines in the MIDI File Explorer.
Startup Language	Language to use in the application. Changing the language will take effect the next time MidiYodi is started.
MIDI Out	Device to use for playback. Available devices depend on operating system and installed MIDI hardware.
License Key	License key to be entered when MidiYodi is purchased. Without the license key some of the features in MidiYodi will be limited or unavailable.

3 MIDI FILE EXPLORER

The **MIDI File Explorer** window is used to open and to explore multiple MIDI files.



Filename	Type	Key	Time	Tempo	Duration	Measures	Tracks	Instruments
africa.mid	1	C Major	4/4	94	4:15	100	30	24
almosthave.mid	1	Bb Major*	4/4*	68*	4:48	83	14	11
Bach.mid	1	C Major	4/4	82	1:13	26	3	2
barasport.mid	1	C Major	4/4	134	1:33	53	5	4
beautifuldayu2.mid	1	C Major	4/4	136	4:17	146	15	14
best of times.mid	1	C Major	4/4*	75*	4:30	86	1	12
Bohemain Rhapsody.mid	1	C Major	2/4	78*	6:14	243	14	13
bond-for-your-eyes-only.mid	1	C Major	4/4	86*	2:50	61	36	35
bond-goldfinger.mid	0		4/4	120	2:13	67	1	7
bond-licence-to-kill.mid	1	E Major*	4/4	80*	4:57	100	16	15
bond-live-and-let-die.mid	0	F# Major	4/4*	61*	5:07	276	1	12
bond-nobody-does-it-better.mid	–	–	–	–	–	–	–	–
bond-nobody-does-it-better2.mid	1		4/4	64*	3:32	57	12	9
bond-theme.mid	1		4/4	143	1:51	67	16	15

The window is divided in two areas that may be individually resized by dragging the line that separates the areas.

3.1 File Browser Area

The top area is a file browser where navigation and layout is operating system dependent. (The picture above displays the Mac version.) A MIDI file can be opened by navigating to the directory and then double-clicking the file.

License constraints: In the trial version only three MIDI file may be opened.

3.2 Multiple File Information Area

The lower area is a powerful tool to preview information of several MIDI files prior to opening them. Selecting multiple MIDI files in the file browser area and then clicking the **Explore** button will collect and display MIDI information from the selected files in this area. The displayed information includes:

Filename	Name of the file.
Type	MIDI file type. Could be 0, 1 or 2. (See chapter 9.1 for details.)
Key	Initial key signature if present in the file. If more key signatures exist an asterisk is displayed as well.

Time	Initial time signature if present in the file. If additional time signatures exist an asterisk is displayed as well.
Tempo	Initial tempo if present in the file. If additional tempo changes exist an asterisk is displayed as well.
Duration	The duration of the song in minutes and seconds.
Measures	The number of measures in the song.
Tracks	The number of tracks in the song.
Instruments	The number of instruments available in the song.

Double-clicking a row will load the MIDI file into the main window.

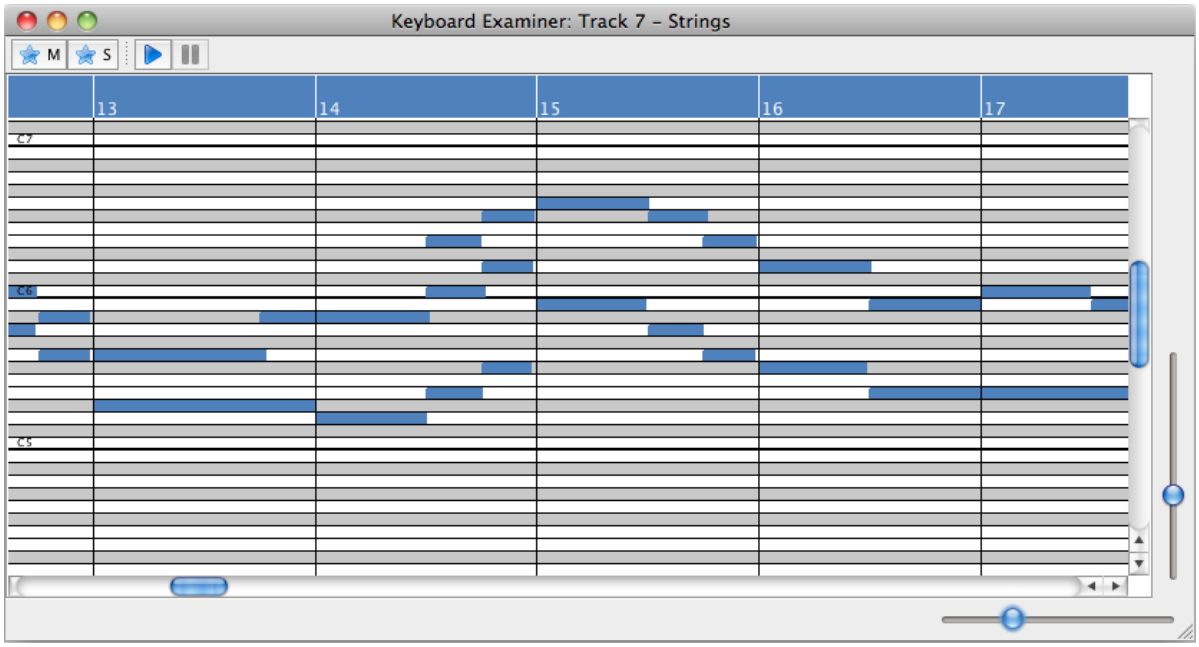
Resting the mouse over a row will display the instruments and their channels that is utilized within the song.

Files displayed in gray are invalid MIDI files.

License constraints: In the trial version MIDI information for only the first three selected file will be displayed. Other files will display <trial> in each column.

4 KEYBOARD EXAMINER

The **Keyboard Examiner** is used for closer examination of note pitches and their duration where each note is drawn in a stand-up keyboard like view.



The gray rows indicate the black keys on a keyboard. Each C is labeled from C-0 (lowest) to C-10 (highest).

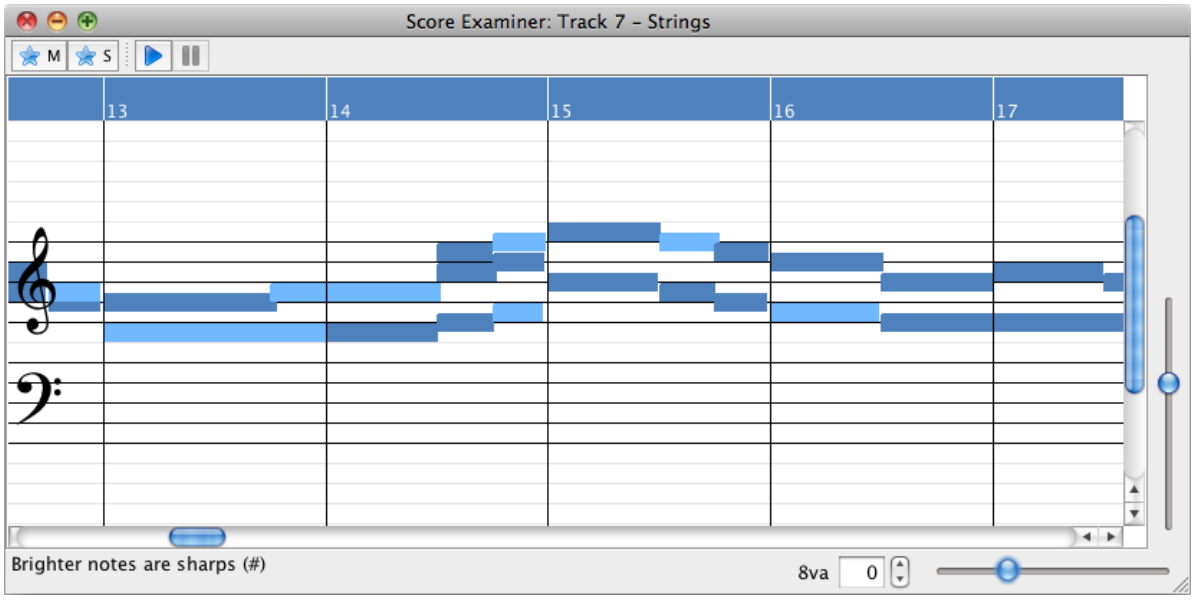
The view contains a horizontal scrollbar to scroll the view port within the song and a vertical scrollbar to scroll within the octaves. Note that if the song is being played and **Auto Scroll** is enabled then using the horizontal scrollbar will result in that the view port is auto readjusted if playback moves outside the view.

The view also contains a horizontal slider that adjusts the visible beat width and a vertical slider that adjusts the "note" height.

In addition start, pause, mute and solo buttons are available.

5 SCORE EXAMINER

The **Score Examiner** is used for closer examination of note pitches and their duration where each note is drawn in a score like view. The score does not include key signatures. Instead all "black" notes are always notated as sharps with a brighter color. Thus a blue note notated as a C is a C while a brighter blue note is C#.



The black lines together with a tremble and bass clef represents a classical piano score where the note C-5 is the C between the two systems. The gray grid lines are supporting lines.

Sharp or flat notes are always presented as sharps, colored in a brighter color.

For high or low notated music, where most of the notes fall above or below the piano system, the **8va** counter can be used to adjust the notes visually to fall inside the system. This might make them easier to read. This will not change the playback pitch, only the visualization.

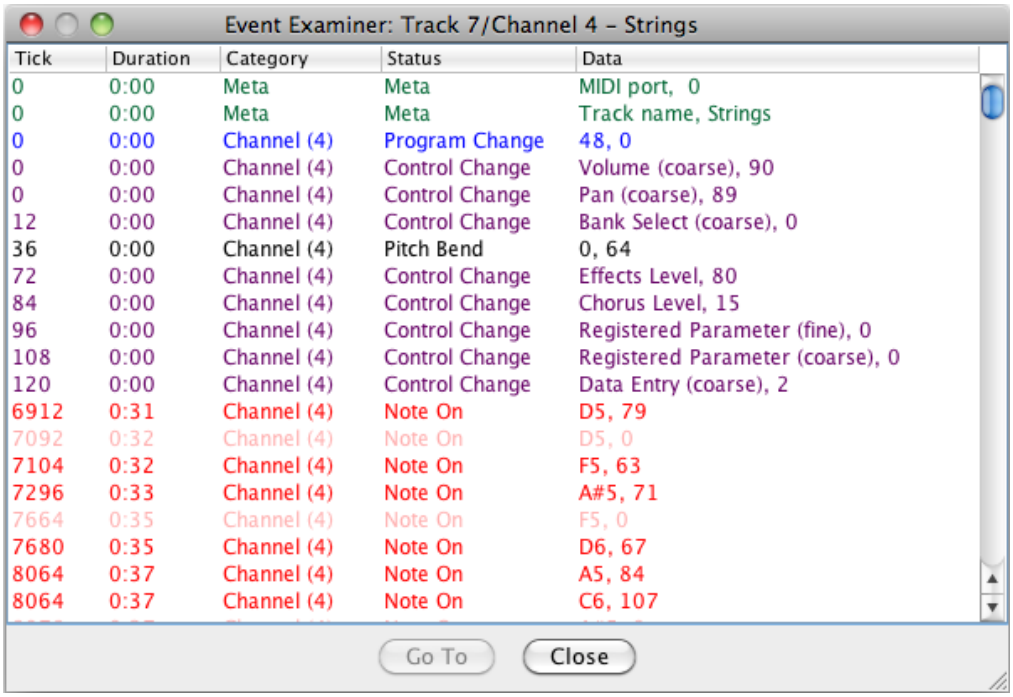
As with the keyboard examiner the view contains a horizontal scrollbar to scroll the view port within the song and a vertical scrollbar to scroll within the octaves. Note that if the song is being played and **Auto Scroll** is enabled then using the horizontal scrollbar may result in that the view port is auto readjusted if playback moves outside the view.

The view also contains a horizontal slider that adjusts the visible beat width and a vertical slider that adjusts the "note" height.

In addition start, pause, mute and solo buttons are available.

6 EVENT EXAMINER

The **Event Examiner** lists all MIDI messages for the selected track.



Tick	The MIDI tick number that determines when the MIDI message is dispatched.
Duration	The time for the MIDI message expressed in minutes and seconds.
Category	The message category which include; *Meta* – Meta messages *Channel* – Channel messages like note on, program change etc. The text is also suffixed with the corresponding channel number. *System Exclusive* – Non standard MIDI messages used for vendor specific information.
Status	The message status/type. For channel messages this column contains the type of channel message such as note on/off, program change, pitch bend etc.
Data	The data column contains the message data which varies depending on the message type. For note on/off messages this will include the note pitch and velocity. For meta messages this could contain the track name, tempo signature etc.

Selecting a row and pressing **Go To** will move playback to the selected rows tick position. Selecting a row having a *Note On* message will play the note.

Messages are colored according to the current scheme:

- Meta messages – Green
- Program change messages – Blue
- Note on messages – Red
- Note off messages – Pink
- Other channel messages – Purple
- System exclusive messages - Orange

7 INSTALLATION

MidiYodi is available on:

- Windows XP, Window Vista, Windows 7
- Mac OS X 10.5 and later
- Unix (any dialect)

7.1 General

1. Java runtime environment (JRE) 1.5 or later has to be installed prior to executing MidiYodi. JRE is by default installed on Mac and Unix an likely it will have been installed on your Windows as well if you have run other Java applications. If not, Windows and Unix versions are available at: http://java.com/en/download/manual.jsp
2. MidiYodi must be downloaded from MidiYodi's download page. http://www.canato.se/midiyodi
3. A license must be purchased for MidiYodi to obtain full functionality.

7.2 Mac & Windows

Windows and Mac versions are distributed as native installers making them easy to install. Just download the installer, execute it and follow the installation instruction.

7.3 Unix

The Unix version does not have an installation script but is simply packed in a tar-file. Download the tar-file and unpack it in a suitable directory:

```
tar xvf midiyodiunix.tar
```

This will unpack the jar-file that can be executed using the following command:

```
java -jar midiyodi.jar
```

8 ABOUT MIDIYODI

MidiYodi is developed and maintained by CANATO in Växjö, Sweden.

Bugs, questions or requests for new functionality can be sent to:

midiyodi@canato.se

The official MidiYodi site where information, documentation, downloads and purchase are available is located at:

http://www.canato.se/midiyodi

9 SHORT ON MIDI

MIDI, also known as GM2 (General MIDI version 2), is a standardized format to store music data as a sequence of standard MIDI messages with a timestamp for each message. A message together with its timestamp is referred to as a *MIDI Event.*

The format does not include audio (like mp3 or wave) but only information such as what instruments that plays on each channel, what notes they play, in what velocity and for what duration etc.

For MIDI to be played it must be fed to a *synthesizer* that understands and correctly interprets the GM2 format. A *sequencer* is used to read a MIDI file and transmit the contained MIDI messages to the synthesizer at their given timestamps. Most operating system includes at least one default MIDI sequencer and synthesizer.

9.1 MIDI File Types

General MIDI files come in three flavors, cleverly named type 0, 1 and 2.

Type 0 These files contain only one track. Messages from different channels are mixed on that same track.

Type 1 These files contain multiple tracks where each track only contains channel messages for one channel.

Type 2 These files contain multiple songs. (Not supported by MidiYodi.)

9.2 MIDI Message Types

A MIDI file contains different types of messages that either control playback, like *NoteOn* messages, or just holds information, like *TrackName* messages.

MIDI messages are grouped in the three categories:

- Voice messages
  Includes messages related to the actual playback on one of the 16 MIDI channels. Some examples include *ProgramChange* that determines what instrument to use, *NoteOn* and *NoteOff* that starts and stops playback of a given note. *VolumeChange* that controls the volume of the instrument.
- Meta messages
  Meta messages are not bound to a specific channel or instrument and are optional within a MIDI file. Some messages are of importance to sequencers like *Tempo* messages while others are of interest to notation programs like *TimeSignature* and *KeySignature* messages. Meta messages also include specific text messages like *Marker*, *TrackName* or just *Text* where the later is often used for lyrics or to implement running text in karaoke players.
- System exclusive messages
  System exclusive messages are vendor or author specific messages that can be used for internal purpose by vendor made synthesizers etc. These messages cannot be interpreted in a general MIDI application like MidiYodi.