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# Overview

MIDI Studio is a Windows 3.1 based sequencer.

MIDI Studio uses a staff to work with music files, so it is targeted at someone who has some musical theory background, or who wants to learn something about musical theory.

MIDI Studio will work with any MIDI device supporting Multimedia Extensions. This includes Sound Blaster, Adlib, and Roland MPU-401 type of devices, including the MT-32, LAPC, SCC-1 family of devices. It will also run with the MPU DOS driver. When MIDI Studio is run with the MPU DOS driver, it uses the MPU's built-in timing.

MIDI Studio was developed using Borland C++, with an object oriented approach.

# Features

Standard music notation :

MIDI Studio can display whole, half, quarter, eighth, sixteenth, thirty-second notes and rests. Each note or rest has a default duration. The actual duration of a note or rest can be adjusted. Dotted notes are supported.

Flat, sharp, or natural symbols for each note.

Key Signature on the staff. All notes will be processed to reflect any changes in key.

Time Signature on the staff.

View two, three, or four bars of a song in the staff area.

Uses standard .MID ( MIDI ) files.

Music can be put into MIDI Studio with the mouse, through a keyboard, or from existing standard MIDI files.

Three options for mouse input:

Align to Beat - The note is automatically aligned to the nearest thirty-second of the beat.

Sequential - The note is appended to the end of the current track.

Free form - The note is placed exactly where the mouse was clicked.

Control Panel

The Control Panel provides buttons and Faders that let you access some of the features of MIDI Studio .

Buttons to see the next and previous bars.

Buttons to play the current bars, the whole song, and to stop play or record.

Buttons to select the active track, and check boxes that display track status at all times.

Note Bar - To easily change the current note.

Buttons to clear and refresh the screen.

Faders to control tempo and velocity.

Buttons to start and stop recording from a synthesizer.

Voice Information

Voice information about any synthesizer can be set up in ordinary files. MIDI Studio uses these files to let you set the voices for each song.

Voice information is sent to the synthesizer when a song is played.

Animation - The notes will be 'painted' on the screen as they are played.

A configuration screen that determines what devices are available on your computer.

Score printing and previewing

' Cut and paste ' ability for groups of notes.

Extensive on-line help.

# Overview

The Studio Screen is the focus of MIDI Studio. It has many features and controls.

Here is a brief overview of the main sections of the screen.

Starting at the top, the studio screen has these main areas:

Title Bar	Contains standard Windows system close icon, the application title, and a minimize button.
PullDown Menus	Standard Windows pull down menus. Each menu is explained under it's own help topic.
Staff Area	A musical staff is drawn in this area. Notes and other symbols can be placed on the staff and MIDI Studio will "play" them.
<u>Event</u> Bar	Clicking on the event bar brings up the Event Dialog. MIDI Events may be viewed, changed, created, and deleted.
Control Panel	The Control Panel contains buttons and faders. The use of each is explained in the Control Panel topic.
Status Bar	The Status bar displays the following information at all times: <ul style="list-style-type: none"><li>- File Name - File Name is blank if there is no active file.</li><li>- <u>Track</u> - The current track shows in red.</li><li>- The current <u>tempo</u>.</li><li>- The current <u>velocity</u>.</li><li>- The current page number.</li></ul>

# Pull down Menus

File	File functions, such as opening and saving files. System function such as Clear , About, and Exit.
Edit	Controls the ' <u>cut</u> and <u>paste</u> ' feature for groups of notes.
Options	<u>Track</u> Summary - Information about the current song. Track Detail - Information about the current track.  Time Signature - Set the song's time signature Time <u>Division</u> - Set the song's time division Key Signature - Set the song's key Signature  Animate - Turns the animation feature off and on. <u>Event</u> Entry options Align to beat - Place event at the nearest 32nd beat Sequential - Add to the end of the track Free Form - Place event where the mouse was clicked
Notes	Select the current note.
Rests	Select the current rest.
Symbols	Select the current symbol.
Voices	Pops the TRACK VOICE SELECTION dialog. The voice for each track can be chosen and sent to the <u>synthesizer</u> .
Configuration	Shows the current settings for the sound board. If the settings are changed <u>MIDI</u> Studio will save them for the next sessions.
Help	Brings up the application's Windows help.

## Related Topics:

[File Menu](#)

[Edit Menu](#)

[Options Menu](#)

[Notes, Rests, and Symbols Menus](#)

[Voices...](#)

[Configuration Dialog](#)

## File Menu

By default MIDI Studio uses the .MID extension for files. You may choose to work with a different extension, but MIDI Studio will always default to .MID.

New	Choosing NEW clears any existing music from the system. You will be asked if you want to save any work in progress.
Open	Choosing OPEN allows you to load music from files. The Studio File dialog box will be displayed and you may choose the file you want to load. MIDI Studio supports Standard MIDI files(.MID or .MFF)
Save	Choosing SAVE writes any changes to the current music file. If the current file has not been set during the session you will be asked to choose a file to save your work to.
Print	Prints a song. The standard windows print dialog is shown. This allows you to print the entire song, a portion of the song, or just one page. You will be asked for a Title and Author, they are optional.
Print Preview	The Print Preview options allow you to see how the song will look on a printed page. The Prev and Next buttons will scroll through the song one page at a time. The song can be printed by choosing the Play button. You will be asked for a Title and Author, they are optional.  <b>** NOTE **</b> Some video drivers distort the size of the preview page, and some can not interpret the font. If there are problems with the Print Preview window try the standard windows VGA video driver from the setup program. The printed page will not be affected by these problems.
Save As	Choosing SAVE AS allows you to save the current music under a different file name.
Clear Board	Reset the board to its initial defaults.
About	Shows the About Box, with version and registration information.
Exit	Exit the system. If there is any work in progress, you will be asked if you want to save it.

## Edit Menu

The Edit menu allows you to cut or copy groups of notes from the screen, and paste them into a different place in the same song, or into another song. After the Cut/Copy mode is chosen, a group of notes can be selected by placing the mouse at the top left corner of the region you want to select and pressing the left mouse button. While holding the mouse button down drag the mouse to the bottom right corner of the region and release. Any notes in the region are copied into the paste buffer. Then move the cursor to where the notes are to be pasted and press the left mouse button.

Cut/Copy	Choosing the CUT/COPY MODE menu item allows you to Mode specify the region you want to cut/copy with the mouse
Cut	Cut is enabled after the Cut/Copy Mode item is selected. Cutting will remove the notes in the cut/copy region and put them in the paste buffer.
Copy	Copy is enabled after the Cut/Copy Mode item is selected. Copying will leave the notes in the cut/copy region and put a copy of them in the paste buffer.
Paste	The paste option is enabled after notes have been copied into the paste buffer. The notes in the paste buffer are not cleared after a paste operation, so they may be pasted into multiple locations.

When paste is pressed a screen will ask you if you want to paste to a beat or use the mouse to specify the location. If a beat is entered, the notes in the paste buffer will be placed at that location. If no beat is entered, the notes will be placed starting at the next mouse click.



## Options Menu

<u>Track Summary</u>	The Track Summary shows the following information about each track: <ul style="list-style-type: none"><li>- Track number</li><li>- Number of notes in the track</li><li>- Voice number for the track ( -1 indicated no voice has been set)</li></ul>
Track Detail	The Track Detail shows the following information for the each note in the current track: <ul style="list-style-type: none"><li>- Beat</li><li>- Value</li><li>- <u>Velocity</u></li><li>- <u>Duration</u></li></ul>
Number of Bars	You may want to adjust the number of bars shown on the screen. Choosing the Number of Bars menu item allows you to select whether to display 2, 3, or 4 bars on the screen.
Time Signature for	Choosing the TIME SIGNATURE item displays the Time Signature dialog. Choose a signature you want by selecting the numerator and the denominator. The time signature is saved each song and between <u>MIDI</u> Studio sessions.
Time Division	Choosing the Time <u>Division</u> item displays the time division dialog. The current value is highlighted in the combo box and the possible values are displayed in the list box. Choose the value you want and press OK to put it in effect. The time division is saved within each <u>.MID</u> file.
Key Signiture	Choosing the KEY SIGNATURE item displays the Key signature dialog. The key for the song can be selected from the list of keys in the list box. The key signatures are displayed graphically on the left hand side of the dialog box. The key signature is saved for each song.
Animate	When animation is on ( checked ) MIDI Studio will 'paint' each note in the staff area as it is played. On slower computers, or in complicated passages, there may be a slight delay between pages.

### Event Input Options

The mouse is used to place musical events in the staff portion of the MIDI Studio screen.

The following options are available:

Align To Beat (default)	The event will be aligned to the nearest 32nd and then placed on the screen.
Sequential	The event will be added to the end of the track. The duration of the existing last event will be calculated and the new event will be placed after the exist last event has finished.

Free Form

The event will be placed exactly where the mouse is clicked.

## Notes, Rests, and Symbols Menu

These three menus list the musical events that can be placed on the screen with the mouse. Only one event is active at any given time.

Choosing a note from the NOTES menu sets the note that will appear on the screen when you click in the staff area. The note toolbar may also be used to set the note.

Choosing a rest from the RESTS menu sets the rest that will appear on the screen when you click in the staff area.

Choosing a symbol from the SYMBOLS menu means, that when you click on the screen, the application will try to find a note to make sharp, flat, or natural. If no note is found, an error occurs. The dot menu (".") will produce dotted notes when a new note is created.

The duration of the note or rest will be set to the default for that event, and may be changed using the Note Dialog.

## Voices...

Selecting the Voices... menu item pops the Voices Dialog.

The Voices Dialog allows you to set the voice for each track and send voice information to the synthesizer.

Each synthesizer/bank needs a .SYN file associated with it. The bank selection button lets you change the voice configuration file.

To change banks, within MIDI Studio, press the bank button on the Voice Dialog. There is generally a button on the synthesizer to change the synthesizer's current bank.

If the bank is changed on the synthesizer, the voices will also change. For example if bank 'A' voice 31 is Piano 1, if the bank on the synthesizer is changed to bank 'B', voice 31 of bank 'B' will be played.

If no voice configuration file has been selected, or the last selection can not be found, a file selection dialog will be popped to allow to select the file.

The .SYN file selection will be saved from session to session.

### Voice Selection

The large list box on the left contains a list of all of the voices available. These voice names are the same as the names entered in the .SYN file. Selecting one of the entries in this list will make it the *active* voice.

Once a voice has been made *active*, pressing one of the Track buttons will assign the active voice to that track. The voice name will appear to the right of the button.

Choose a voice, for each active track, or choose -NONE- for tracks that are not active.

**Tracks that have no voice (-NONE-) will not be played.** This feature allows you to isolate a track or tracks for playback.

Track voices are saved for each music file when the file is saved. When a .MID is opened, the voices that were saved with the file will be sent to the synthesizer.

## Configuration Dialog

The Configuration Dialog is used to select MIDI input and output devices.

MIDI Studio will detect which drivers are installed on your system and present the choices in the input and output devices selection boxes. If you have a sound board installed on your system, and it does not appear in the list, the Windows driver for that board has not been installed ( See Drivers ).

When the Record button is pressed, and there is no selected device, the Configuration Dialog will be show with a list of the input devices available on your system.

MPU - DOS driver

The configuration dialog shows the current address and interrupt settings for the MPU sound board. These settings apply to the DOS driver only. The setting for the Windows drivers are controlled when the driver is installed. The settings selected will be saved from session to session.

## The Staff Area

The staff area is used to display, and change music.

Use the file menu to open existing MIDI songs, or use the mouse to input notes.

To create a new note click on the staff area with the left mouse button.

To delete a note click on the note with the left mouse button.

To display the detail on a note click on the note with the right mouse button. The note's beat, duration and velocity may be changed through the Note Detail dialog.

To indicate that a note is flat or sharp, select flat or sharp from the symbols menu and click on the note with the left mouse button.

Controlling what appears in the staff area is generally done through the pull down menus and the Control Panel. See these help topics for more information.

In addition to working with files, the staff area can be used as a musical notepad. Ideas can be quickly "jotted" down, played, revised and saved.

The Metronome - The wait metronome appears whenever MIDI Studio loads a file, saves file, or plays. Each tick on the metronome represents 200 notes being processed.

## The Event Bar

The Event Bar visually shows MIDI events by putting the first letter of the event name on the bar at the beat the event will be played. If there are events close together the letters may overlap each other. Use the event dialog to get more information on the events.

Clicking on the event bar brings up the Event Dialog. MIDI Events may be viewed, changed, created, and deleted.

See Event Dialog for more information on working with events.

## Control Panel

Prev, Next	These buttons show the NEXT or PREVIOUS page of music in a file.
Stop	This button stops play and record. The button is 'grayed' when it is not needed.
Play	Plays the music in the staff area.
Play Song	Plays the entire current song.
<u>Track</u> Control	Select and configure tracks. More help is available in the Track Control section.
New	Clears the staff area and current data. Any changes to the current song will be lost.
Refresh	Redraws the Studio Screen area.
<u>Tempo</u>	Use the tempo fader to control the tempo. The current tempo is displayed under the fader control on the status bar.
<u>Velocity</u>	Use the velocity fader to control the default velocity. The default velocity applies to new notes, to change an existing note's velocity use the Note Dialog. The current velocity is displayed under the fader control on the status bar.
Record	Starts <u>MIDI</u> recording. More help is available in the Record section.
Exit	Exit MIDI Studio



# Track Control Buttons

The track control button group has two groups of buttons:

The check boxes, labeled 1-8 show which tracks are currently active.

A check box with an 'X' in it means the track is active.

To make a track active, click on a check box with no 'X' in it.

To de-activate a track, click on a check box with an 'X' in it.

Note \* De-activating a track will delete all of the events, notes associated with the track.

Push buttons labeled 1-8 let you select the active track. The active track is shown in red in the staff area, all other tracks are shown in black.

The active track number, 1-8, is shown below the buttons, on the status bar.

When the application is started, track 1 is the active track.

# Record

MIDI Studio can record notes played on an attached synthesizer. To start recording, press the RECORD button on the control panel.

When a key is released MIDI Studio will display the note in the staff area. The current page will scroll forward as you play.

All of the input from the keyboard will be recorded on the active track.

Press the STOP button to end record mode.

For the MPU DOS driver, the MPU's internal metronome will start, this let's you know that you are in record mode.

# Note Dialog

The note dialog displays, and allows you to alter, the information about a note.

You can bring up the note dialog by placing the cursor on the note and pressing the right mouse button. The cursor must be on the lower half of the note.

The note dialog displays the following information about a note:

Beat	Shows the beat, in relation to the start of the song. This value may be changed through the note dialog.
Value	Shows the pitch of the note in standard <u>MIDI</u> notation (C4, F5#). This value may be NOT changed through the note dialog.
<u>Velocity</u>	Shows the velocity of the note. This value may be changed through the note dialog.
<u>Duration</u>	Shows the length of the note in MIDI standard time. This value may be changed through the note dialog.

# Event Dialog

The event dialog creates, displays, or allows you to alter, the information about MIDI events.

You can bring up the event dialog by placing the cursor over the gray "Events" bar and clicking on it.

The listbox on the left show the events for the page you are on. The events for the entire song can be shown by clicking the "Entire Song" checkbox. You can change the current event by selecting an event from the left list.

The detail for an event is displayed on the right side of the screen. More detail about each control follows:

**Event data** - These fields display the actual event values. The values will be used save and play the event.

Beat Shows the beat in relation to the start of the song.

Track Shows the track the event will be played on.

Type Shows the numeric value of the event type.

Value1 The meaning of this value is dependent on the type event.

Value2 The meaning of this value is dependent on the type event.

Data The meaning of this value is dependent on the type event.

**Combo Boxes** - The Combo Boxes translate Event Data into meaningful names.

Event Name - Displays the event name for all events.

System Message Name - If the event is a system event, this displays the type of system event.

Meta Event Name - If the event is a meta event, this displays the type of meta event.

## Create an Event

A new event is created by clicking the create button. The detail information on the screen will be used to create the event. You can start from scratch and enter all of the information, or select an existing event, modify it, and press create. The existing event will not be affected if the create button is pressed.

## Modify an Event

Select the event from the left list. The values for the event can be modified directly, by changing the Event Data fields, or indirectly, by using the Combo boxes.

## Delete an Event

Select the event from the left list and click the delete button.

# Registration

The Registration screen can be found by choosing the File / About menu item and clicking the Registration button. The screen displays information about registering and allows you to enter the registration code. ( See Register.txt )

Once MIDI Studio is registered, Sounds Great Software will send back a registration code. Entering the registered user's name and the registration code into the screen will complete the registration process. The registered user's name will now appear in the about screen, and there will be no delay on startup.

Registration of MIDI Studio applies to upgrades of the product. There will be no fees charged to registered users.

# How to Use .SYN Files

## Synthesizer Files - .SYN

Synthesizer files contain voice information for vendor specific synthesizers.

The files are easily made for any model of MIDI compatible synthesizer by creating a file with the following format:

Type the voices, one per line, in the same order as they are arranged on the synthesizer. So if the first three voices on your synthesizer are:

Echomoon, Piano 1, and Sax your file would look like:

```
Echomoon  
Piano 1  
Sax
```

The file may have any name you want, the application will look for all files with the .SYN extension.

If your Synthesizer has more than one voice bank, create a separate for each bank.

The application will remember which file you were using during your last MIDI Studio session.

Studio comes with three .SYN files. A general one and two for the Yamaha DS-55. These may be used as templates for creating .SYN files for other synthesizers.

# Faders

Faders are used in the application to control tempo and velocity. The current value of tempo and velocity are displayed on the status bar under the faders.

The range for the tempo fader is from 8 to 240.

The range for the velocity fader is from 0 to 127.

There are a number of ways to adjust the value of a fader. The mouse can be used to point and shoot at the desired level. The fader bar should then move to that level and the numeric value in the box should change. The mouse may also be used to 'grab and drag' the fader bar. Click on the fader bar and hold the mouse button down. You should now be able to drag the fader bar up and down. The numeric display will show the value of the fader. Faders will also react to the up and down arrow keys. Once a fader has 'the focus', which is done by clicking on the fader, the up and down arrow keys will change the value of the fader.

# Drivers

Applications communicate with sound boards through drivers. Generally, a driver must be installed before the board can be used.

MIDI Studio can use two types of drivers, the MPU DOS driver and any Windows driver.

The MPU DOS driver comes with the MPU, see your MPU package for instructions.

Windows drivers are shipped with Windows. They are installed through the Control Panel, Drivers Icon.

Drivers are also available on most BBSs.

## **Installing Windows Multi-Media Drivers**

Unless you have used other MIDI tools in the past, the MIDI drivers for your sound board may not be installed. The Windows control panel is used to install drivers. It can usually be found in the Main Windows control group, or use the File/Run menu items to run the control.exe program.

Double click on the Drivers icon in the control panel. The Drivers currently installed on your computer will be listed. If there is no listing for a driver for your sound board choose the Add button.

A list of some of the most popular drivers will be presented. If a driver for your sound board is shown, double click on it. You will be asked to insert one of the Windows diskettes so that the driver can be copied on to your computer. If there is no driver for your soundboard listed, the best place to look for it is the disks that came with your sound board. Choose the "Unlisted or updated driver" line and insert each disk that came with your board. If a driver is found, the name will be shown to you and you will be asked if you want to install the driver.

Windows needs to be restarted after the driver has been installed.

The driver that you installed should now show as an option on the Config... dialog inside MIDI Studio. If the device is capable of play and record, it will show on both the play and record lists. If it is a play only device, such as SB PRO FM or Adlib, it will show on the play list only.



# Installation

The complete Studio system includes the following files.

mstudio.exe	The main system executable
studio.dll	<u>MIDI Studio DLL</u>
bwcc.dll	Custom control DLL
mstudio.hlp	Windows help file for
readme.txt	Release information
licence.txt	More information on licencing
musical.fot	Font for Printing
musical.ttf	Font for Printing
orderfrm.txt	Order form
file_id.diz	Product description
register.txt	More Information Registering MIDI Studio
packing.txt	A list of files
ds55_a.syn	<u>Synthesizer</u> file for a Yamaha DS-55, 'A' bank
ds55_b.syn	Synthesizer file for a Yamaha DS-55, 'B' bank
bwccxxx.dll	Language extention specific

Unzip all of these files into a directory.

MStudio.ini is the initialization file for the system. Copy it to your windows directory ( EG. C:\WINDOWS ).

To use print or print preview the Musical Symbols font must be installed on your system. The two files musical.fot and musical.ttf make up the font. Use the Control Panel / Fonts icon to load the font.

## Minimum Hardware and Software Requirements

### Hardware

286 (386 recommended)

2MB RAM (4MB recommended)  
600K free hard disk space  
Sound Board  
MIDI Compatible Synthesizer  
Amplifier and Speakers...

### Software

Microsoft Windows 3.X  
MIDI Studio

## .INI File

The MSTUDIO.INI file saves settings between sessions.

A MSTUDIO.INI file is distributed with MIDI Studio, and it should be copied into your Windows directory.

A Sample .INI file:

```
[MStudio]
Division=192
BeatsPerBar=4
Tempo=120
Velocity=80
Syn File=c:\mstudio\ds55_a.syn
Number of Beats=4
Board=SB Pro
InBoard=SB Pro
```

# Trouble Shooting

If MIDI Studio fails to function check the following:

Is a sound board installed in your computer?

Does the board function with other software designed for it?

Is the Windows driver installed ( Check the Control Panel - Drivers icon )

Are the MIDI cables installed properly? (MIDI OUT to MIDI IN, MIDI IN TO MIDI OUT)

Is the synthesizer to amplifier to speakers setup working? Can you play notes on the synthesizer through the speakers?

Are all of the files listed in the Installation section of this help present in your directory?

Bring up the Configuration Dialog. Does MIDI Studio detect the sound board?

Are there entries in the input and output device sections? Are they selected?

# Errors

## BWCCXXX.dll Error Message

This error is generated on startup if the Language in the International section of your Control Panel is set to anything other than English (American).

A BWCCXXX.DLL file is shipped with MIDI Studio. If you wish to keep your International setting the way it is, rename the BWCCXXX.dll file to the file name \_\_\_\_\_ that is appearing in your error message.

## Print Preview format

Some video drivers distort the size of the preview page, and some can not interpret the font. If there are problems with the Print Preview window try the standard windows VGA video driver from the setup program. The printed page will not be affected by these problems.

# Glossary of Terms

.MID

.SYN

Bank

Buffer

Clock

Copy

Cut

Division

Duration

Event

MIDI

Note On

Paste

Synthesizer

Tempo

Track

Velocity

# **.MID**

Standard MIDI Files

## **.SYN**

Synthesizer Configuration files

## **Bank**

A group of voices on a synthesizer. Only one bank may be active at a time.



## **Buffer**

A temporary storage area.

## **Clock**

Refers to the clock time controlled by the sound board.

## Copy

In a word processor a section of text may be placed in to a buffer and moved to a different location. With MIDI Studio you may COPY a group of notes into a buffer and move them to a different location in the song ( or to a different song )

## **Cut**

In a word processor a section of text may be placed in to a buffer and moved to a different location. With MIDI Studio you may CUT a group of notes into a buffer and move them to a different location in the song ( or to a different song ). Cutting notes removes them from the current location.

## **Division**

A MIDI term, the number of clock ticks per beat.

## Duration

The length of time for an event. MIDI uses a numeric value for to represent this length of time. Use the Note Dialog to view/update the duration for an event

## **Event**

(Generally notes and rests) An event causes data to be sent by MIDI Studio to a sound board. The sound board turns the data into music.

## **MIDI**

Musical Independent Device Interface. A standard that allows different devices to store and play music.



## Note On

A note on message is sent by Studio 4, or a synthesizer, to tell the sound board to produce sound at a given pitch.

## **Paste**

Copy a group of notes from a buffer to a location in the current song. ( See Cut and Copy )

## **Synthesizer**

Any device capable of producing synthetic sounds. To be used with MIDI Studio the device must be capable of interpreting MIDI commands.

## **Tempo**

The MIDI standard uses a numeric value to represent tempo. MIDI Studio displays this value on the control panel and allows you to modify it.

## Track

Generally, a MIDI song is organized by breaking the song into pieces according to the instrument that plays the piece. For example, a typical song may have a piano track, a bass track, and a percussion track.

Strictly speaking, in this application, the events placed on one track are sent to the sound board through the same channel. MIDI Studio allows for 8 tracks.

## **Velocity**

How loud a note will be when played. Velocity is expressed as a number between 0 and 127, with 0 being silence and 127 being loud. While recording the keyboard sends information about how hard each key was struck. Studio captures this information and uses it during play. When the mouse is used to generate notes, Studio gives each note the default velocity.

