

## Quick Start

Welcome to the **Quick Start** section. Here we will try to get you up and running as fast as possible by describing how to play one of the sample songs that comes with Windows, CANYON.MID

### Configuration

Before you can play a song, the Windows drivers for your hardware must be installed. Refer to the [Windows and MIDI](#) section for detailed information on how to do this.

WinJammer must be also be told which devices you wish to use. The [MIDI Configure](#) command is used to do this.

Selecting [MIDI Configure](#) will display a window that shows available MIDI output ports. Select the device driver that is appropriate for your equipment by highlighting it and clicking on **Add** or by double clicking on the driver name in the output box. WinJammer requires the selection of an output port. If you aren't going to record then you do not need to select an input port. Click on **Ok** to finish configuration.

**Important Note:** Sound Blaster 1.0 and 1.5 owners.

The Sound Blaster 1.0 and 1.5 do not support simultaneous MIDI input and output. It is possible to use the internal FM synthesizer for output and the MIDI port for input.

Alternately, select the Sound Blaster MIDI port for output, and select <none> for the input device.

### Playing a Song

Select the [File Open](#) command through the menu, or by pressing the **Ctrl+O** key combination. Using the dialog box displayed, select your Windows directory, usually C:\WINDOWS, double click on C:\, then double click on WINDOWS. Select CANYON.MID, by highlighting it and clicking on **OK**, or by double clicking on the file name. The song will be loaded into memory, and the main window will be updated to show a list of the tracks in the song.



2. Play the song. This part is easy, simply click on the Play icon.

### Quick Overview of the Program

The sample songs that come with WinJammer, or with Windows, are voiced according to the General MIDI Specification. This means they will play properly through the [MIDI Mapper](#), assuming that you have set up a mapping for your equipment. Those of you with a Sound Blaster, Adlib or compatible equipment, already are set up according to the General MIDI Specification.

Right now you should be looking at the main WinJammer window. In the Title bar you will see WinJammer - CANYON.MID. WinJammer will always display the filename of the song that is currently open. Below that is the Menu bar with the selectable menu items. Below the Menu bar is the [Toolbar](#).


The WinJammer Toolbar has the familiar Record, Play, Rewind and Fast Forward Buttons.

The Stop button will be displayed instead of the Play button when a song is being playing. To the right of the Fast Forward button are the to and from disk icons. The from disk icon



acts the same as selecting [File Open](#) or by pressing Ctrl+O. The to disk icon 

acts the same way as if you had selected [File Save As](#) or by pressing Ctrl+A.

The next two controls show the current position in the song, and the time elapsed from start of playback. The current position control allows you to start playback of the song from any position. Attached to the position control is what is called a spin button 

. Clicking on the top half of the spin button, the up arrow, will move forward one measure. Similarly clicking on the bottom half of the spin button, the down arrow, will move backward one measure.

To the right of the current position is the Track control. This control is used globally throughout WinJammer to indicate the currently selected track. If you wish to change the current track, you simply click on the spin button in front of the Track control and the track number, and name, will change. Below the Track control is the current **Tempo** of the song. This can be used to change the tempo while the song is playing. Changes made using this control will be reflected in the tempo stored in track zero.

On the right of the toolbar is a question mark, the help button. Pressing the help button will display this help file. Pressing **F1** at any time will display context sensitive help.

Below the Toolbar is the Track List Window. If this window isn't current showing, select it from the Window menu. This window displays information about the currently loaded song, track by track. Going from left to right the information displayed is Track Number, Track Name, Instrument Name, Channel, Port, Patch Number/Name, (used for muting the track), Number of Measures in the track and the Number of Events in the track.

For CANYON.MID, there should be two tracks listed: 0 and 1. Track 0 contains a track name, no instrument name, uses multiple channels, outputs to port 1, uses more than one patch on that track, has 87 measures, 4525 events. Select MIDI Configure to see which device is assigned as Port 1. Track 1 is empty. One of the nicer features of WinJammer is that WinJammer always adds an empty track to any loaded song. WinJammer keeps this track available for your use and if you do use it, will automatically create another one. When the song is saved this empty track is not saved.



Below the Track List window are icons for some other windows. These are the Event List, Piano Roll and Audition Patches. Each of these windows performs a specific function.

Below the icons is the Status bar. The largest area of the status bar shows a quick help message when you're using the menus. The next area is a meter that displays the current position in the song (as a percentage) while playing. This is also used as a progress indicator for lengthy operations like loading a song. Beside the meter is the current time signature - double clicking on this will start up the Event List window for track zero, which is where time signatures are placed.

### **Adjusting the Song**

Since we already have CANYON.MID open, we will perform some quick changes on it.

Let's break up the song into separate channels. Select track 0 by highlighting 0 in the Track selector on the toolbar. Select the Split command from the Track menu. A dialog box will be displayed that will allow you to split a track various ways. We want to split by channel, which should already be selected. Click on Ok. You will get 13 tracks, numbered from 0 to 12.

If you are using a Sound Blaster, Adlib or compatible, perform the following procedure. Double click on the  for each track that is using a channel between 1 and 10. You will see the  change to m, for mute. The reason this is done is that the CANYON song is coded using a low/high duplicate scheme. Since the tracks using the higher channels are a near duplicate of the lower channels, we mute them to avoid playing more notes than the Sound Blaster, Adlib and compatibles are capable of handling. If you have other equipment, you should probably mute channels 13 through 16 instead.

Click on the Play Button in the Toolbar. You should see the position control changing, the elapsed time display changing rapidly, and hear the CANYON song playing.

To change other information on the Main window, stop play then highlight the item and press enter or double click on the item. You are then able to edit or enter new data.

Information on using the Microsoft Windows MIDI Mapper can be found in your Windows user guide.

This is the end of the Quick Start tutorial. WinJammer is a very rich MIDI sequencer and has loads of features. Don't be afraid to experiment!

## Commands

This index contains a list of the Help available on the various WinJammer commands. For information on how to use Help, press **F1** or choose Using Help from the Help menu.

<u>File Menu</u>	Create, Merge, Load or Save MIDI files and Import System Exclusive files.
<u>Edit Menu</u>	Copy, Move or Delete tracks in the song.
<u>Event Menu</u>	Notes, Chords, Triplets, Create, Insert, Delete Note Events
<u>Track Menu</u>	Perform changes on tracks.
<u>MIDI Menu</u>	Control MIDI devices.
<u>Song Menu</u>	Edit Song Parameters
<u>Options Menu</u>	Customize WinJammer.
<u>Window Menu</u>	Control the windows.
<u>Help Menu</u>	Help on WinJammer, About WinJammer, Help on Help

## WinJammer Keys

The following keys may be used as shortcuts for various commands in the main menu. These keys are active in all windows, except when the song is playing or recording.

- F1** Help
- Ctrl+N** Clear the current song from memory, start a new song
- Ctrl+O** Load another song
- Ctrl+S** Save the current song
- Ctrl+A** Save the song using a new file name
- Ctrl+R** Send Reset sequence to all MIDI devices
- F9** Jump to the Toolbar

The following sets of keys are only supported on some windows. They are grouped by window.

### Track List Window

- Ctrl+Z** Undo the last changes made
- Ctrl+X** Move selected tracks into clipboard
- Ctrl+C** Copy selected tracks into clipboard
- Ctrl+V** Insert the contents of the clipboard
- Ins** Insert a new track before the current track
- Space** Start or Stop playing

### Event List Window

- Enter** Edit the current event or group of events.
- Del** Delete the selected events
- Ins** Insert a new event
- Ctrl+D** Change the note's duration
- Ctrl+H** Make current note part of a chord
- Ctrl+F** Repeat search forward
- Ctrl+P** Repeat search backward
- Ctrl+.** Lengthen the note by 1/2
- Ctrl+T** Shorten the note to 2/3 of original size
- Ctrl+1** Make the current note a whole note
- Ctrl+2** Make the current note a half note
- Ctrl+3** Make the current note a quarter note
- Ctrl+4** Make the current note a eighth note
- Ctrl+5** Make the current note a sixteenth note
- Ctrl+6** Make the current note a thirty-second note
- Ctrl+7** Make the current note a sixty-fourth note
- Ctrl+Z** Undo the last changes made
- Ctrl+X** Move selected tracks into clipboard
- Ctrl+C** Copy selected tracks into clipboard
- Ctrl+V** Insert the contents of the clipboard
- Space** Start or Stop playing

## Piano Roll Window Accelerators

- Enter** Edit the current event or group of events.
- Del** Delete the selected events
- Ins** Insert a new event
- PgUp** Transpose the selected notes up one octave
- PgDn** Transpose the selected notes down one octave
- Up** Transpose the selected notes up one semitone
- Down** Transpose the selected notes down one semitone
- Tab** Move to the next note in the track
- Shift+Tab** Move to the previous note in the track
- Space** Start or Stop playing
- Ctrl+D** Change the note's duration
- Ctrl+H** Make current note part of a chord
- Ctrl+.** Lengthen the note by 1/2
- Ctrl+T** Shorten the note to 2/3 of original size
- Ctrl+1** Make the current note a whole note
- Ctrl+2** Make the current note a half note
- Ctrl+3** Make the current note a quarter note
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- Ctrl+5** Make the current note a sixteenth note
- Ctrl+6** Make the current note a thirty-second note
- Ctrl+7** Make the current note a sixty-fourth note
- Ctrl+Z** Undo the last changes made
- Ctrl+X** Move selected tracks into clipboard
- Ctrl+C** Copy selected tracks into clipboard
- Ctrl+V** Insert the contents of the clipboard

## **Mute and Solo**

The current track can be muted at any time by double clicking on the  column, with the left mouse button, in the Track List Window. This is often very useful when recording, or while voicing a song.

The current track can also be made Solo by double clicking on the  column, with the right mouse button. This will mute all of the other tracks. Double clicking again will switch back.

## Opening and Closing Windows

The various windows are opened and closed in two ways. You can use the Window menu of the WinJammer frame window, or the icons at the bottom of the WinJammer window.

### Using the Mouse

Use the mouse to execute the correct command from the Window menu of the main window. If the window is closed, it will be opened. If it's open and not the active window, it will be made the active window.

You can also click on the appropriate icon. The various icons are displayed starting along the bottom left of the WinJammer Main window.

### Using the Keyboard

**Ctrl+F6** will cycle through each of WinJammer's windows. Select the window you wish to activate. If the window is iconic, press the **Alt+Spacebar** keys. You will see the WinJammer System Menu open. Press the **Cursor Left** key and the icon you have selected will display a system menu. Select Restore to open the window.

Alternatively open the Window Menu, press **Alt+W**, and select the window you wish to open.



## Windows and MIDI

In this topic, the steps required to install the MIDI drivers in Windows is explained. A more complete discussion can be found in the Windows manuals.

### Installing a Device Driver

When Windows is installed, it does not setup any drivers for your MIDI devices. This must be done separately.

The Windows Control Panel application is used to install the MIDI drivers. Start the Control Panel by double clicking on its icon in the Main group in Program Manager.

Double click on the Drivers icon inside the Control Panel. A list of the currently installed drivers will appear. If you haven't installed any drivers yet, the list should contain the MIDI Mapper, the Timer, [MCI] MIDI Sequencer and the [MCI] Sound driver.

To add a new driver, press the Add button. A list of the available drivers will be displayed. Highlight the driver for your device and press the Ok button. Windows will ask you to insert a diskette containing the selected driver. Do this for as many devices as you have.

If the driver you need is not listed, check any diskettes that came with your device. Most likely the driver is there. Select the **Unlisted or updated driver** entry and Windows will prompt you to insert the diskette so it can read it.

Some drivers will require information such as port number or an interrupt number. The default location for a Sound Blaster card is 220, interrupt 7. The default for a MPU-401 type of MIDI interface (including the Roland LAPC and SCC-1 cards) is 330, interrupt 2/9.

After this is done, Windows will ask you if you'd like to restart Windows. This is necessary because Windows installs the MIDI drivers when it first loads. Select **Restart Now** and Windows will restart.

### Configuring WinJammer

After Windows been restarted, double click on the WinJammer icon. Refer to the [MIDI Configure](#) command for information on configuring WinJammer.

### The MIDI Mapper

One of the possible output devices is the Microsoft MIDI Mapper. It is best to avoid the MIDI Mapper unless you have to use it. It adds extra overhead, and can cause problems.

**Important Note:** Sound Blaster 1.0 and 1.5 owners.

The Sound Blaster 1.0 and 1.5 do not support simultaneous MIDI input and output. It is possible to use the internal FM synthesizer for output and the MIDI port for input. Alternately, select the Sound Blaster MIDI port for output, and select <none> for the input device.

## Windows MIDI Mapper

The Windows MIDI Mapper is a program which adjusts the MIDI events sent by a program such as WinJammer, before the actual device driver receives the event to output. There are three things which the MIDI Mapper will adjust: patch numbers, channel numbers and note numbers.

The MIDI Mapper assumes that the output from these programs is in accordance with the General MIDI specification. The MIDI Mapper then remaps the output events as required for your device. Normally this will only affect songs played to MIDI keyboards which do not support the General MIDI specification directly.

To setup a map for your device open the control panel. Double click on the MIDI Mapper icon. If another program is using the MIDI Mapper you will be unable to change the MIDI Mapper settings. Close the other program and open the MIDI Mapper again. A dialog box will appear with three main settings. These are Setup, Patch Maps and Key Maps. Below this will be a combo-box with a preselected setup. Click on the down arrow. A list of the setups currently known to Windows will appear. Select the setup that matches your device. If your device is not present check the instructions that came with your device. For many devices, you will have to create a new setup.

Press the Edit button to edit the currently selected setup. A table will appear that shows Source and Destination channels. By editing this table it is possible to redirect MIDI events to other channels and devices. For example channel 10 is used for drums by the General MIDI specification, and some devices such as those made by Yamaha use channel 16 for drums. Using the setup you can reroute channel 10 to 16 if you have a Yamaha keyboard. Next to this is the Port Name. If you have more than one output device, you can alter the setup so that some channels are routed to one device and some to another. Do not do this if you have configured WinJammer to use these devices directly. The MIDI Mapper will not share the ports listed with other programs. For keyboards, you can set the port to a MIDI output device, like an MPU-401, and then select a patch map. Adlib, Sound Blaster and most compatibles will not have to do this. Refer to your manufacturer's instructions on how to setup using Windows.

If you have defined, or need to define, a patch map, click on the Patch Maps button and then click on the down arrow. A list of the currently available patch maps will be displayed. If yours is not displayed, create a new one. Pressing **Edit** or **New** will display a Patch Map table. This table lists the General MIDI specification patches and patch names on the left. The next column is the Destination patch number. You can edit this number to match the patches defined for your device. Check the manufacturer's manual for details. When you are done click on **Ok** and then Click on **Close**. This will save your new setup and patch maps.

The MIDI Mapper will make use of the setup and patch maps to transform the data being sent from programs like WinJammer so that the data is understandable by your output device. This requires that any songs played using the MIDI Mapper be created according to the General MIDI specification.

More information on the MIDI Mapper is available in the topic [That Infernal MIDI Mapper](#).

## General MIDI Specification

The following table lists the names of each of the General MIDI patch numbers. This mapping is assumed for all events on all channels other than channel 10. Channel 10 is reserved for the drum track. Note that similar instruments are grouped together.

### General MIDI Patch Map

<b>#</b>	<b>Piano</b>	<b>#</b>	<b>Chromatic Percussion</b>
1	Acoustic Grand Piano	9	Celesta
2	Bright Acoustic Piano	10	Glockenspiel
3	Electric Grand Piano	11	Music Box
4	Honky-Tonk Piano	12	Vibraphone
5	Rhodes Piano	13	Marimba
6	Chorused Piano	14	Xylophone
7	Harpsichord	15	Tubular Bells
8	Clavinet	16	Dulcimer
<b>#</b>	<b>Organ</b>	<b>#</b>	<b>Guitar</b>
17	Hammond Organ	25	Acoustic Guitar (nylon)
18	Percussive Organ	26	Acoustic Guitar (steel)
19	Rock Organ	27	Electric Guitar (jazz)
20	Church Organ	28	Electric Guitar (clean)
21	Reed Organ	29	Electric Guitar (muted)
22	Accordion	30	Overdriven Guitar
23	Harmonica	31	Distortion Guitar
24	Tango Accordion	32	Guitar Harmonics
<b>#</b>	<b>Bass</b>	<b>#</b>	<b>Strings</b>
33	Acoustic Bass	41	Violin
34	Electric Bass (finger)	42	Viola
35	Electric Bass (pick)	43	Cello
36	Fretless Bass	44	Contrabass
37	Slap Bass 1	45	Tremolo Strings
38	Slap Bass 2	46	Pizzicato Strings
39	Synth Bass 1	47	Orchestral Harp
40	Synth Bass 2	48	Timpani
<b>#</b>	<b>Ensemble</b>	<b>#</b>	<b>Brass</b>
49	String Ensemble 1	57	Trumpet
50	String Ensemble 2	58	Trombone
51	SynthStrings 1	59	Tuba
52	SynthStrings 2	60	Muted Trumpet
53	Choir Aahs	61	French Horn
54	Voice Oohs	62	Brass Section
55	Synth Voice	63	Synth Brass 1
56	Orchestra Hit	64	Synth Brass 2
<b>#</b>	<b>Reed</b>	<b>#</b>	<b>Pipe</b>
65	Soprano Sax	73	Piccolo
66	Alto Sax	74	Flute
67	Tenor Sax	75	Recorder
68	Baritone Sax	76	Pan Flute
69	Oboe	77	Blown Bottle

70	English Horn	78	Skakuhachi
71	Bassoon	79	Whistle
72	Clarinet	80	Ocarina
<b>#</b>	<b>Synth Lead</b>	<b>#</b>	<b>Synth Pad</b>
81	Lead 1 (square)	89	Pad 1 (new age)
82	Lead 2 (sawtooth)	90	Pad 2 (warm)
83	Lead 3 (calliope lead)	91	Pad 3 (polysynth)
84	Lead 4 (chiff lead)	92	Pad 4 (choir)
85	Lead 5 (charang)	93	Pad 5 (bowed)
86	Lead 6 (voice)	94	Pad 6 (metallic)
87	Lead 7 (fifths)	95	Pad 7 (halo)
88	Lead 8 (brass + lead)	96	Pad 8 (sweep)
<b>#</b>	<b>Synth Effects</b>	<b>#</b>	<b>Ethnic</b>
97	FX 1 (rain)	105	Sitar
98	FX 2 (soundtrack)	106	Banjo
99	FX 3 (crystal)	107	Shamisen
100	FX 4 (atmosphere)	108	Koto
101	FX 5 (brightness)	109	Kalimba
102	FX 6 (goblins)	110	Bagpipe
103	FX 7 (echoes)	111	Fiddle
104	FX 8 (sci-fi)	112	Shanai
<b>#</b>	<b>Percussive</b>	<b>#</b>	<b>Sound Effects</b>
113	Tinkle Bell	121	Guitar Fret Noise
114	Agogo	122	Breath Noise
115	Steel Drums	123	Seashore
116	Woodblock	124	Bird Tweet
117	Taiko Drum	125	Telephone Ring
118	Melodic Tom	126	Helicopter
119	Synth Drum	127	Applause
120	Reverse Cymbal	128	Gunshot

## General MIDI Percussion Key Map

The following table shows the sound assigned to each MIDI note on channel 10.

<b>#</b>	<b>Drum Sound</b>	<b>#</b>	<b>Drum Sound</b>
35	Acoustic Bass Drum	59	Ride Cymbal 2
36	Bass Drum 1	60	Hi Bongo
37	Side Stick	61	Low Bongo
38	Acoustic Snare	62	Mute Hi Conga
39	Hand Clap	63	Open Hi Conga
40	Electric Snare	64	Low Conga
41	Low Floor Tom	65	High Timbale
42	Closed Hi-Hat	66	Low Timbale
43	High Floor Tom	67	High Agogo
44	Pedal Hi-Hat	68	Low Agogo
45	Low Tom	69	Cabasa
46	Open Hi-Hat	70	Maracas
47	Low-Mid Tom	71	Short Whistle
48	Hi-Mid Tom	72	Long Whistle
49	Crash Cymbal 1	73	Short Guiro
50	High Tom	74	Long Guiro
51	Ride Cymbal 1	75	Claves
52	Chinese Cymbal	76	Hi Wood Block

53	Ride Bell	77	Low Wood Block
54	Tambourine	78	Mute Cuica
55	Splash Cymbal	79	Open Cuica
56	Cowbell	80	Mute Triangle
57	Crash Cymbal 2	81	Open Triangle
58	Vibraslap		

## Answers to the most frequently encountered Problems

### Q. Nothing is Recorded

- If you are using a Casio keyboard, it is possible that it is using MIDI Running Status for long periods of time. The workaround for this is to press record, select a patch on the Casio and then start playing.
- Interrupt problems may be encountered on some machine configurations. There is a known bug in Windows running in Enhanced mode, where Interrupt 2/9 is disabled when you start a DOS box. You must restart windows to reset this Interrupt. The better solution is to move your MIDI device off of Interrupt 2/9.
- Some drivers, like the MPU401 driver that comes with Windows, do not give an error when you configure the driver with the incorrect interrupt. The drivers will let you play songs, but they will not record. Reconfigure the driver to the correct interrupt.
- The MIDI Record Filter may be setup incorrectly and be filtering all incoming events. Please check and reconfigure.
- A simple test, to see if WinJammer is receiving any data, is to select the MIDI System Exclusive command and use the **Receive** button. To see if anything is being received, press some keys on the keyboard, and the byte counter will increment. Some keyboards send MIDI active status messages, so the counter will increment by itself. This is normal.
- Check that your MIDI cables are connected properly. Cables from a MIDI In port connect to a MIDI Out or MIDI Thru port, and vice-versa.
- Ensure that you have the correct MIDI input driver selected. Select MIDI Configure to see what is currently selected. Note that many devices have more than one input driver.
- Revision 1.0 and 1.5 SoundBlaster cards do not support MIDI In and MIDI Out at the same time. If you have a revision 1.0 or 1.5 board set the MIDI Out port to another device before recording.
- One version of a driver from Creative Labs, SoundBlaster, had a problem with System Exclusive commands. If you are using a SoundBlaster, please upgrade to the latest drivers. These can be obtained from the Creative Labs BBS, check the documentation that came with your device.
- The first driver release for the Gravis Ultrasound didn't allow MIDI In. If you have a Gravis Ultrasound please upgrade your drivers. Check the Ultrasound documentation for the number of the Gravis BBS.

### Q. Playback Problems

- You press play and WinJammer displays "**Waiting...**" on the Toolbar instead of starting to play. This is because the switches are not correctly set in the MIDI Advanced command. Click on the **Reset to Defaults** button and click on **Ok**.
- If nothing is heard when playing, it may be a problem with the drivers. Some drivers do not respond to all 16 MIDI channels. You can check this out by changing the channel of the tracks in the song. The channels that do not respond are not enabled for the current output driver.

### Q. What the heck is the MIDI Mapper good for anyway?

- The answer to this and many more questions about the MIDI Mapper and Microsoft's way of doing MIDI is answered in the topic [That Infernal MIDI Mapper](#).

## **That Infernal MIDI Mapper**

This is an attempt to answer some of the most common questions about the MIDI Mapper and MIDI under Windows.

### **Q. What's the MIDI Mapper for anyway?**

A. The MIDI Mapper's purpose is to provide device independence to MIDI devices. It attempts to do that same thing that the printer drivers do for instance - a Windows program doesn't have to know how to deal with your specific printer type, it just deals with a generic printer. Then Windows and the printer driver figure out how to make the printed output appear.

### **Q. Okay, how does it provide this independence?**

A. Technically, what the MIDI Mapper does, is remap patches, notes, channels and adjust velocities. It uses the Patch Map, Key Map and Setup to determine how to do this. You can create or adjust these yourself.

### **Q. Huh? What's a patch, channel and velocity?**

A. These are all part of the MIDI lingo. A Patch is used to determine the sound to be used - examples would be Pianos, Strings or Guitars. Patches are used to select which instrument is used. Channels are used to separate songs to allow more than one instrument to sound at the same time. There are 16 MIDI channels, and each channel can use a single instrument or patch at a time. All notes are played on a MIDI channel. Velocity is a measure of how hard a note is pressed, and is used to specify how loud a particular note is.

### **Q. Will it work with all MIDI files?**

A. Well, kinda yes and no. Until recently, there wasn't any standard for patch numbers, or note numbers. It was up to the manufacturer to determine what patch number to use for a Piano sound for instance. Now there is a General MIDI specification, which does identify which instrument is to be used for each patch number. However, there are a large number of songs out there that are not General MIDI. Now this doesn't mean that you shouldn't try to play non-General MIDI files with the MIDI Mapper. The worst that can happen is it'll sound bad.

### **Q. What's General MIDI?**

A. This is an official specification from the International MIDI Association (the MIDI standards committee). Microsoft has used a subset of the specification for their own purposes. Microsoft has adopted the General MIDI patch numbers and drum key numbers, however they have not taken the complete specification.

### **Q. What are the differences between Microsoft's way and the real General MIDI Specification?**

A. The General MIDI Specification requires much more capable MIDI equipment than Microsoft. A real General MIDI device supports 32 note polyphony (that's 32 notes sounding at the same time), and uses all 16 MIDI channels. This is more than Microsoft's target device can handle, so Microsoft has defined two less capable devices - a "Basic" device, and an "Extended" one. They've also defined a set of "Authoring Guidelines" for MIDI files.

### **Q. What are the capabilities of a Basic device.**

A. A Basic device must be capable of playing 6 melodic notes, in at least three different instruments, as well as 5 percussion notes. All sound cards are capable of this - in fact, most can only do this. Basic devices are supposed to listen to MIDI channels 13 through 15 for the melodic instruments, with the drums on channel 16. The Adlib, Sound Blaster

and original Sound Blaster Pro are all Basic devices, as are most sound cards. The Aria card's driver called **Aria Wave Synth 1** is a basic device.

**Q. Okay, what about Extended devices?**

A. Extended devices must be capable of 16 melodic notes, using 9 instruments, plus 16 note, 8 instrument percussive. Extended devices are supposed to listen to MIDI channels 1 through 9 for melodic sounds, with the drum track on channel 10. Examples of Extended devices include the Roland MT-32/LAPC, Roland Sound Canvas series (including the SCC-1), and Turtle Beach's MultiSound card. The Aria card's driver called **Aria Wave Synth 2** is an extended device.

**Q. What are Microsoft's Authoring Guidelines?**

A. The purpose of the guidelines is to allow people to build a single MIDI file that will play on either a Basic device or an Extended one. To do this, you put two versions of the same song in the file - one on channels 13 through 16, and another on channels 1 through 10. Each copy of the song is must meet the rules for Basic and Extended devices, with higher priority sounds on the lower channel numbers. The guidelines also include specific setting for volume and such.

**Q. Are there a lot of files done Microsoft's way?**

A. Yes and no. On CompuServe and many BBSes, they are very few and far between. However, the CANYON.MID file included with Windows follows Microsoft's rules, and there are a number of CD-ROMs out there that include Microsoft format files.

**Q. How do I know whether a song is General MIDI?**

A. Often there is a comment in the song which will tell you what equipment it was designed for. Windows has a warning message that you'll get if a song isn't marked as General MIDI - most people turn this off, because not all files that are General MIDI are marked as such.

**Q. Okay, enough background - How do I get this thing to play?**

A. Getting MIDI working under Windows requires two steps - installing the required drivers for your sound equipment, and configuring the MIDI Mapper.

**Q. Where do I install the Sound Drivers?**

A. All sound drivers are installed using the Window Control Panel application (in your Main program group). Once started, Control Panel shows a set of icons - choose the one labeled Drivers to install, remove or configure sound drivers. Now a list of the currently installed drivers will be shown - press Add to add a new driver. Most sound cards come with drivers for them - follow the manufacturer's directions to install the drivers. This is also fairly well documented in your Windows manuals.

**Q. Okay, how do I configure the MIDI Mapper?**

A. Most sound cards come with new setups for the MIDI Mapper. There are often three setups that'll use the internal sounds of the sound card - one labeled "Basic", one labeled "Extended" and one labeled "All". The differences between these three setups are the channels used. A Basic setup will ignore anything on channels 1 to 12, and an extended setup will ignore anything on channels 11 through 16. The All setup will listen to all 16 MIDI channels.

**Q. When do I use All?**

A. For most songs All is the best setting. However, Canyon won't sound very good with this setting, because it contains two copies of the song as discussed before. Unless you've got a large collection of songs done Microsoft's way, it's probably best to stick with All, and



use Winjammer to edit Canyon if you want to hear it.

**Q. What's this setting called MIDI?**

A. Most sound cards include an optional MIDI connection. Often this is an add on. You'd use this to connect an external MIDI device, such as a keyboard. Unless you've got an external MIDI device, you can ignore anything like "Sound Blaster 1.0 MIDI" - if you use this, you won't hear anything.

**Q. What are the MIDI Mapper Setups?**

A. A Setup in the MIDI Mapper connects a key map and patch map to a set of drivers. A Key map is used to remap drum notes, and the patch map is used to remap patches. The setup ties all of these together, and assigns a patch map, key map and device to each MIDI channel.

**Q. When would I have to edit or create a MIDI Mapper Setup?**

A. If you've got a MIDI device that isn't supported in the list of available setups, you'll have to edit the setup. For instance, someone with a Roland Sound Canvas is probably using the Windows MPU-401 driver. The Sound Canvas is a real General MIDI device - it doesn't need any patch or key maps. You can easily create a setup for this - just assign "MPU-401" as the driver for each channel, and save the setup.

## **Help on WinJammer**

You can access help on WinJammer by selecting any of the commands from the Help menu. The About command will tell you the current revision levels of WinJammer and MIDILIB.

# EXPLORING WINJAMMER

[Quick Start](#)

[Configuration](#)

[Registration](#)

Point to any area of the screen and click for an explanation.

The screenshot shows the WinJammer software interface. At the top is a menu bar with 'File', 'Edit', 'Event', 'Track', 'Midi', 'Song', 'Options', 'Window', and 'Help'. Below the menu bar is a control panel with buttons for 'Record', 'Play', 'Rewind', 'Fast Fwd', and two track selection buttons. It also displays a time counter at '1.1:000', a file name '0:Minuet in G, J.', a tempo of '120', and a help icon. The main area is a 'Track List' table with columns for track number, name, instrument, channel, port, patch, a checkmark, time, and events. Below the table are icons for 'Event List', 'Piano Roll', and 'Audition Patches'. At the bottom, there is a status bar with 'Press F1 for Help', a progress indicator at '0%', and a page indicator at '3/4'.

#	Name	Instrument	Chan	Port	Patch	✓	Time	Events
0	Minuet in G, J.S. Bac	Arranged by C McKee	none	1	none	✓	1	3
1	General MIDI Setup		none	1	none	✓	1	0
2	Melody Line	Acoustic Grand Piano	1	1	1:Acoustic Grand Pia	✓	75	364
3	Left Hand	Celesta	2	1	9:Celesta	✓	73	152
4	Bass Line	Acoustic Bass	3	1	33:Acoustic Bass	✓	73	194
5	Left Hand Again	Choir Aahs	4	1	53:Choir Aahs	✓	73	152
6			none	1	none	✓	1	0

## **System Menu**

The Windows system menu is accessible through here. The system menu allows you to change the size of the WinJammer window, maximize it, minimize it or close it. For further information on using the Windows System menu please refer to your windows user guide.

## **Maximize and Minimize**

These controls allow you to shrink WinJammer down to an icon (minimize - the down arrow), or have WinJammer take up the entire display area (maximize - the up arrow). When WinJammer is maximized the Up arrow is displayed with a down arrow as well. Clicking on this will return WinJammer to its default screen size.

## **Help Menu**

The help menu contains a number of entries to help you in accessing this help file. The About Winjammer menu item will tell you the current version of Winjammer and MIDILIB.

## **Record Button**

This button, when pressed, starts recording. Events are recorded, from the input device as specified in the [MIDI Configuration](#). Once recording starts, the **Play** button turns into a **Stop** button - press it to stop recording.

For more information on recording, see the [Recording](#) topic.

## Play Button



Pressing the **Play** button will start the currently loaded song playing, at the position shown on the **Toolbar**. When a song is playing the button will turn into a **Stop** button, as shown here.

For more information on playing songs, see the [Playing](#) topic.



## **Rewind Button**

This button will rewind the current song to the position the song was last started from. If a song was started from beat 21, stopped on beat 34, pressing rewind will return you to beat 21. Pressing the rewind button a second time will return the song to beat position 0.

This button can be pressed while playing or recording - play will stop, and the song will be rewound to the starting position.

## **Fast Forward Button**

If the song isn't playing, this button will move the play position to the end of the current song.

When a song is playing, clicking on this will cause the song to play at double tempo. A second click will cause the song to play at quadruple (four times) the tempo. Clicking once more will return the song to the regular tempo.

## **Open File Button**

Clicking on this button will start the File Open dialog, and allow you to load in a new MIDI file.

## **Save File As Button**

This button will start the File Save As command. It is identical to running the command through the menus.

## **Play Position**

This control displays the current position in the song. When playing, it is updated as the song plays. When stopped, it is used to scroll the various windows, and specify a starting position for playback or recording.

The play position can also be set by clicking the right mouse button in the measure number area of the Piano Roll window.

## **Tempo**

This control displays the current tempo as the song is playing. The spin button may be used to adjust the tempo while playing. The changes made are permanent, and are stored in track zero of the MIDI file.

## **Track Selector**

This displays the current track. The current track is always the one used in the Piano Roll and Event List windows.

The spin button can be used to change the current track. The Track List window may also be used to select the current track.

## Help

Clicking on the help button will bring up this help file. Select **Search** to search on a keyword for specific help. Select Winjammer Tour for a quick explanation of the main Winjammer window and Commands for an explanation of the menu commands.



## **Status Line**

This area is known as a status or information line. This is used to display help text for the various items on the menus. It is also used to display error messages while playing.

## **Elapsed Time**

This displays the time elapsed since playback or record was started.

If the MIDI sync mode is selected, this may show "Waiting" instead of a time. This indicates that playback/recording has not started yet. In MIDI sync mode, this means that a MIDI Start or Continue command has not been seen yet. See the [MIDI Advanced](#) command for more information.

## **Time Signature**

The current Time Signature is shown here. This will always be the time signature matching the current Play Position as shown on the **Toolbar**.

Double clicking on this area will cause track zero to be selected as the current track, and the Event List window to be made active. The Time Signature events can then be added or edited using this window.

## **Progress Meter**

The **Progress Meter** is used to indicate the current play position, or the percentage complete of a lengthy command.

While playing or recording, the **Progress Meter** displays the current play position as a percentage of the total song length. At other times, it displays the current Play Position as a percentage of the total song length.

Commands such as File Open or File Save which take a significant amount of time to complete also use the **Progress Meter** to display their progress.

## **MIDI Glossary**

This glossary of MIDI terms is based on a glossary written by Eugene A Confrey, Ph.D. I would like to thank him for allowing this use of his glossary. I should also say that I have made some changes to this glossary, so all errors should be considered mine, not Gene's.

### **Accidentals**

**Aftertouch**

**Bar**

**Beat**

**Buffer**

**Bulk Dump**

**Cancel**

**Channel**

**Clef**

**Clock**

**Controller**

**Controller Change**

**Count In**

**Cut-And-Paste**

**Data Bytes**

**Device Driver**

**Event**

**Filter**

**General MIDI Mode**

**Humanize**

**Import**

**Instrumentation**

**Key Signature**

**Looping**

**MCI**

**Messages**

**Meta Events**

**Metronome**

**MIDI**

**MIDIEX File**

**MIDI Mapper**

**MIDI Thru**

**MPU-401 Compatible**

**Multi-Timbral**

**Mute**

**Pan**

**Patch**

**Piano Roll Editor**

**Pitch Bend Wheel**  
**Polyphony**  
**Port**  
**PPQN**  
**Program Change**  
**Punch In**

**Quantization**

**Record**

**SMPTE**  
**Snap To**  
**Standard Midi File**  
**Status Byte**  
**Step Record**  
**Synthesizer**  
**SYSEX**

**Tempo**  
**Time Base**  
**Time Signature**  
**Track**  
**Transpose**

**Velocity**

**WAVE**

**Aftertouch:** The change in pressure on a key after the initial key press. Normally used to control vibrato or other characteristics.

**Bar:** A synonym for a measure. A musical time, a grouping of beats.



**Beat:** Literally, a single stroke or pulsation.

**Buffer:** A temporary storage area in memory.

**Bulk Dump:** Denotes a series of MIDI System Exclusive messages. Sometimes, this involves transferring a mass of data, like several choruses of a song that have been stored in memory from the keyboard to the sequencer or vice versa.

**Channel:** In MIDI, channels are used to separate different sections of a song that are going to play simultaneously. Each channel is assigned to a single instrument in any particular instant of time. One channel is usually reserved for a percussion voice.

**Clef:** That symbol at the beginning of a staff, the one that determines the pitch.

**Clock:** A clock is used to synchronize two devices. In MIDI, the term clock is used to denote a single time source, which everything plays along with. MIDI clocks are actually special messages that are sent 24 times (normally) per beat, and are used to synchronize two sequencers, or a sequencer and a drum machine. Normally, the sequencer's clock is the important one. Other clock sources are rarely used.

**Controller:** In sequencing, refers to a setting, a parameter, such as controller 7 (volume). In this sense, a controller is a MIDI event.

**Controller Change:** This event will be displayed in the Event List window. It refers to a change in a synthesizer setting. There are 128 possible MIDI controllers.



**Count In:** A command in a sequencer that plays a metronome for several measures until you are ready to record.

**Cut-And-Paste:** In word-processing, this function means moving text from one place in a document to another. In MIDI, one can copy a section of a musical passage and paste it elsewhere.

**Data Bytes:** These are the bytes which follow the status byte in a MIDI message, e.g., what note has been struck, how hard.

**Filter:** The noun and the verb, in MIDI, are used primarily in connection with events (note on, program change, tempo change...) and with channel changes. Each event is either filtered (deleted), transformed, or passed through.

**General Midi Mode:** A convention specifying how a sequence (a song) should be constructed, so that it will play on a variety of hardware.

**Import:** To bring data from one program into another.

**Instrumentation:** The selection of instruments in a MIDI arrangement.

**Key Signature:** Musical notation shows this in terms of sharps and flats after the clef. Software sequencers usually show a song key as "F Major/D Minor," and indicate the number of sharps or flats. B-flat Major/G Minor has two flats, for example.



**Messages:** The net effect of MIDI-computing is sound: melodies, harmonies, rhythms... But the MIDI message (the MIDI event) itself is not a sound. Transmitted are digital commands--about 1,000 events per second.

**Metronome:** A device to mark time by producing a repeated tick. The older type--a triangular box with a vibrating arm--was succeeded by an electrical unit. In MIDI, the ticks are computer-generated.

**MIDI.** An acronym for Musical Instrument Digital Interface. This is a standard protocol for communication between musical devices.

**MIDIEX File:** MIDIEX is a de-facto standard file format, containing raw MIDI data without a header.

**MIDI Mapper:** Microsoft's utility program, which can help in remapping patch, channel, etc. during playback.

**MIDI Thru:** One of the three defined MIDI port types. A MIDI In port receives information from other equipment. A MIDI Out port sends information to other equipment. A MIDI Thru port outputs the information received through a MIDI In port, sending it to other equipment. This allows for MIDI events to be echoed to other synthesizers.

**MPU-401 Compatible:** The original Roland MPU-401 was the most popular MIDI interface for IBM PCs, and is still the most widely supported. Many manufacturers (including Roland) make compatible MIDI interfaces.

**Multi-Timbral:** In MIDI, a multi-timbral sound module can play several timbres (sounds) on different channels simultaneously. A multi-timbral device is one that is prepared to sound like more than one instrument at a time.



**Mute:** A sequencer command to disable the playback of specified tracks.

**Patch:** In some early keyboard synthesizers, one selected "instruments" to play (e.g., vibraphone, clarinet...) Later, the term "voice" emerged, in part, because some of the sounds were beyond instruments (police whistles, human voices, etc.). In contemporary MIDI-computing, the word "patch" is prominent--one reason being that a single keyboard setting, like 99, may encompass a large range of percussive sounds. In any event, to a sequencer, the patch setting will determine the nature of the sounds.

**Piano Roll Editor:** A common notation used for editing by many sequencers. The notes of each track are shown as horizontal bars: the vertical position representing pitch; the horizontal length representing duration of the note (or chord).

**Pitch Bend Wheel:** A wheel on a keyboard that allows notes to be bent up or down.  
"Pitch bend" is also a MIDI message.

**Polyphony:** From the Greek, meaning variety of tones. In MIDI, the question is: "How many notes can be played simultaneously?" Maximum polyphony cannot be exceeded.

**PPQN:** Pulses per quarter-note. A measurement of time resolution. Similar to the term Timebase.

**Program Change:** A MIDI event used to select a new program or patch.

**Quantization:** To quantize is to force all notes played to fall on the nearest time interval specified. It shifts events to an exact rhythmic position. The opposite is called Humanize.



**Record:** In the world of sound, to register something reproducible on a disk, like a phonograph record, or on magnetic tape. Traditional recording captures the amplitude (height) and frequency (number) of wave forms. MIDI-computing does not really "record." It encodes messages, digitally, by means of numbers. Because of established usage, however, the words "record" and "recording" often appear in MIDI-computing, along with "play," "rewind," "fast forward," etc. In MIDI-computing, these words are really metaphors. A typical sequencer will "record" all of the MIDI events received, along with the time they were received.

**Standard MIDI File:** Often identified by its extension (.MID, .MFF or .SMF), this is a file that can store MIDI messages, such as songs. The data in a MIDI file can be played, manipulated, edited... A MIDI file comprises actions performed on an instrument (keys pressed, how hard...) There is a standard MIDI file format. A principal advantage of a MIDI file is that it uses comparatively little disk space, but, more importantly, it is a standard across platforms and sequencers.

**Status Byte:** In a MIDI message, this announces what kind of message is being sent, e.g., "note-on."

**Synthesizer:** (Often shortened to synth.) A device which is capable of producing synthetic sounds. Originally, a synthesizer was so called because it synthesized acoustic instruments. Nowadays, the term refers to the sound-generating circuitry of any MIDI gear. Another term is sound module.

**Tempo:** In music, the rate of speed (like allegretto).

**Time Base:** The number of ticks per beat or quarter note.

**Time Signature:** In traditional musical notation, this is expressed as a fractional sign, like  $\frac{3}{4}$ . The denominator indicates the unit for the beat; the numerator shows the number of notes per measure.

**Track:** In MIDI, the term "track" designates a location where one records or plays back a musical message, usually a portion of the total arrangement. To illustrate, one might record an oboe melody line on Track Two, then record a bowed bass line on Track Three. When played, the sounds can be simultaneous. Most MIDI software now accommodates 64 tracks of music, enough for a rich orchestral sound. Tracks are purely for convenience; channels are required.



**Transpose:** To perform a musical composition in a different key. Both synthesizers and sequencers can carry out this function.

**Velocity:** Velocity is the MIDI way of determining how hard a note is pressed on the keyboard controller.

**Accidentals:** In Music, these are sharps, flats or naturals that are not indicated in the current key signature.

**Cancel:** In Windows, the term cancel is used to terminate a command in progress. As an example, a command such as File Open can be ended before completion, by choosing the Cancel button on the dialog. Most dialogs have a cancel option.

**Event:** There are a number of MIDI events, such as Note On, Program Change, Controller Change or System Exclusive. Each of these causes a specific change in the sound to occur.

**Humanize:** A term that is used in the sense of introducing random irregularities in event timing and velocity, in order to reduce the mechanical character of a performance. The opposite of Quantize.

**Looping:** Used to repeat a section of a recording.

**MCI:** Media Control Interface. A Windows interface, used to control many different devices. This can be used to play CD audio, Wave files, MIDI and much more.



**Meta Event:** In a MIDI file, a meta event is an event which is not directly transmitted to MIDI devices. These events control aspects of the file (such as a tempo event) or provide additional information (such as a meta text event).

**Pan:** To pan is to move the sound between full left and full right in a stereo sound field. In MIDI, this is controlled by controller number 10, with values of hard left being 0, hard right being 127 and centered being 64.

**Port:** A port is a connection to a specific MIDI device driver in Windows.

**Device Driver:** A MIDI Device Driver in Windows is a special type of software, used to make the sound hardware accessible to Windows programs. This often is found on diskettes which came with the sound hardware.

**Punch In:** Punch In recording is a special type of recording, used to re-record a section of a track.

**Step Record:** Step Recording is a special record mode, where notes are recorded step by step, note by note, without regard for the actual elapsed time between events.

**Snap To:** Snap to is a mode used to facilitate the entry or editing of note timing. When enabled, this causes notes to "snap" to the chosen snap interval.

**SMPTE:** Indicates a standard time code, developed by the Society of Motion Picture Engineers. This time code is used in the MIDI world, to synchronize to an external device such as a video tape recorder. This is done in conjunction with MIDI Time Code, which is a way of encoding SMPTE as a MIDI signal.



**SYSEX:** A short form for the term MIDI System Exclusive event.

**WAVE:** A digital sample of a real world sound. This might be a short clip from a movie.

## **Edit Menu**

The Edit menu includes commands to copy, delete and insert tracks. Most of the commands on this menu are only active when the Track List window is selected.

For more information about an Edit Menu command, select one of the following topics.

<u>Undo</u>	Reverses the action of the previous command.
<u>Cut</u>	Deletes the current track and moves it to the clipboard.
<u>Copy</u>	Copies the current track to the clipboard.
<u>Paste</u>	Moves data from the clipboard into WinJammer.
<u>Clear</u>	Clears the current track of all events.
<u>Delete</u>	Deletes the current track.
<u>New Track</u>	Creates a new track before the current track.

## **Edit Undo**

The **Edit Undo** command is used to undo the previous operation on the song. Most commands can be undone.

Undo works using a single undo buffer, so only a single operation can be undone.

The undo command itself is undoable - running **Edit Undo** twice will return to the original state.

**Short Cut Key: Ctrl+Z**

## **Edit Cut**

The **Edit Cut** command copies the currently selected track into the Windows Clipboard. The previous contents of the clipboard are lost. The selected track are then removed from the song.

The format used in the clipboard is compatible with many other Windows MIDI programs. The tracks are stored in the clipboard as a type 1 standard MIDI file, using the registered clipboard name of "Standard MIDI File".

This command can be undone using Edit Undo command.

**Short Cut Key: Ctrl+X**

## **Edit Copy**

The **Edit Copy** command copies the currently selected track into the Windows Clipboard. The previous contents of the clipboard are lost.

The format used for this form is compatible with many other Windows MIDI programs. The tracks are stored in the clipboard as a type 1 standard MIDI file, using the registered clipboard name of "Standard MIDI File".

This command cannot be undone using Edit Undo command, since no changes were made to the song. Only the previous content of the clipboard is lost.

**Short Cut Key: Ctrl+C**

## **Edit Paste**

The **Edit Paste** command is used to insert tracks from the Windows Clipboard into the song. The Edit Copy or Edit Cut commands are used to place something into the clipboard.

The tracks in the clipboard are inserted into the song as new tracks before the current track. The format used here is compatible with many other Windows MIDI products. **Edit Paste** is not undoable using Edit Undo. Should you need to undo it, simply select the inserted tracks.

**Short Cut Key: Ctrl+V**

## **Edit Clear**

The **Edit Clear** command will delete all events from the currently selected track, however the track is not deleted from the song.

The Edit Delete command is very similar to **Edit Clear**, except it deletes the space occupied by the events.

This command can be undone using Edit Undo command.



## **Edit Delete**

The **Edit Delete** command will delete the selected track.

The Edit Clear command is very similar to **Edit Delete**, except it does not delete the selected track.

This command can be undone using Edit Undo command.

## **Edit New Track**

The **Edit New Track** command inserts a blank new track before the selected track. This command is only available when the Track List window is active. Because of the special nature of track number zero, it is not possible to insert a new track before it.

The new track will have no channel, port or patch numbers attached to it, however they can be added using the Track List window.

New tracks are also automatically created whenever events are added to the last track in the song.

This command can be undone using Edit Undo

**Short Cut Key: Ins**

## Track Menu

The Track Menu includes a number of commands which perform changes to events on the currently selected track.

For more information about a Track Menu command, select one of the following topics.

<u>Change Channel</u>	Change the MIDI channel of events.
<u>Clear Section</u>	Delete events in a time range.
<u>Filter Channel</u>	Delete MIDI events on some channels.
<u>Filter Events</u>	Delete selected MIDI event types.
<u>Information</u>	Display track information.
<u>Merge</u>	Merge events from one or more tracks into one.
<u>Quantize</u>	Adjust timing of events.
<u>Replicate</u>	Copy a section of a track.
<u>Split</u>	Split the current track into multiple tracks.
<u>Transform</u>	Perform transformation on event values.
<u>Transpose</u>	Transpose the notes.

## Track Change Channel

The **Track Change Channel** command is used to change the channel number for selected events in the current track.

The dialog prompts for a new channel number, and a channel range. All events in the specified channel range will be set to the new channel number.

For example, assume there were two events in the track:

1.1:000 Note On	3	C 5	64	0:060
1.2:000 Note On	4	E 6	64	1:000

If a **Track Change Channel** command were carried out, selecting a range of 4 to 16, with a new channel of 1, the following would result:

1.1:000 Note On	3	C 5	64	0:060
1.2:000 Note On	1	E 6	64	1:000

In the event that you make a mistake performing this command, the Edit Undo command can be used to restore original tracks.

## **Track Clear Section**

The **Track Clear Section** command is used to delete all events occurring in a specified timeframe range on the selected track.

A dialog box is displayed, allowing the entry of the start and ending times. These times are inclusive, that is if a starting time of 1.1:000 is specified then an event with a time of 1.1:000 will be deleted. This command will not affect any events outside of the specified time range. Events starting after the end of the range will not have their starting times changed.

In the event that you make a mistake performing this command, the Edit Undo command can be used to restore the tracks.

## **Track Filter Channel**

The **Filter Channel** command is used to delete all MIDI events that occur in a specified channel range from a track.

A dialog box is displayed, which is used to select the range of channel numbers to delete. All events with a channel number in the specified range will be deleted.

Non channel events such as tempo and time signature events will never be deleted by this command.

In the event that you make a mistake performing this command, the Edit Undo command can be used to restore the track to its original value.

## **Track Filter Events**

The **Filter Events** command is used to delete certain types of MIDI events from a track.

A dialog box is displayed, which is used to select which event types are to be deleted from the track. Selecting an event will cause any events of this type to be deleted from the track.

In the event that you make a mistake performing this command, the Edit Undo command can be used to restore the track.

## Track Information

The **Track Information** command is used to display useful information about a track.

If all events in the track occur on the same MIDI channel, that channel number is displayed. If more than one channel is used, the message "MIDI Events on Multiple Channels" is displayed instead. If there are no MIDI events in the track, the message "No MIDI Events" is displayed.

The total track time length is displayed, along with the number of events in the track and the number of bytes required to hold the track.

The maximum number of simultaneous notes that are on at any given time is displayed. If only one note is on at a time, the message is "Monophonic Track". If no note events are found in the track the message will be "No Notes in Track".

The range of note events is displayed. This is often useful when converting drum tracks between different drum machines. The note range is shown by both note name and decimal MIDI note number. The octave number displayed can be adjusted using the Options Preferences command.

If a MIDI Program Change event occurs in the track, the selected patch number will be displayed. If multiple patches are used, a message will indicate this as well. The patch base can be adjusted using the Options Preferences command.



## Track Merge

The **Track Merge** command is used to combine the contents of the selected tracks into a single track. All events from both tracks are placed into the destination track, in the appropriate order.

Select the tracks to be merged in the **Merge Tracks** listbox. This will allow the selection of more than one track at a time.

The **Into Track** box is used to select the track to be merged into. The last item in this list is <new track> which indicates a new track at the end of the song. If the destination track is also selected as a source track, it will simply be skipped.

If you check the **Delete Source Tracks** item, all source tracks will be deleted.

In the event that you make a mistake performing this command, the Edit Undo command can be used to restore the track.

## Track Quantize

The **Track Quantize** command is used to alter the timing of all events in a track.

The starting time for all events in the track will be adjusted so that they start on a time which is an even multiple of the entered time.

The interval to quantize to is specified in either ticks or by selecting the type of note.

The note lengths can also be quantized if desired. The three possible actions that can be performed on the note lengths are:

**Unaffected** do not adjust any note lengths

**Aligned** quantize note lengths

**Equal** set all lengths to the quantization time

In the event that you make a mistake performing this command, the Edit Undo command can be used to restore the track.

For example, assume that the track contained the following:

1.0:118 Note On	3	C 5	64	0:073
1.1:112 Note On	3	E 6	65	1:010
1.2:049 Note On	3	F 5	40	0:080

Quantization with lengths **Unaffected** and a **Time Interval** of an eighth note (60 ticks) with an accuracy of 100% will produce:

1.1:000 Note On	3	C 5	64	0:073
1.2:000 Note On	3	E 6	65	1:010
1.2:060 Note On	3	F 5	40	0:080

With lengths **Aligned**, result would be:

1.1:000 Note On	3	C 5	64	0:060
1.2:000 Note On	3	E 6	65	1:000
1.2:060 Note On	3	F 5	40	0:060

With lengths **Equal**, resulting track is:

1.1:000 Note On	3	C 5	64	0:060
1.2:000 Note On	3	E 6	65	0:060
1.2:060 Note On	3	F 5	40	0:060

## Track Replicate

The **Track Replicate** command is used to make one or more copies of a section of a track. A dialog box is displayed, which is used to select a range to copy from, a starting time for the first copy and the number of times to copy the section.

All events in the source range are copied. The times specified are inclusive, that is if an event starts at one of the boundary times then it will be included in the copy.

The starting time entered is the time that the "from" time is mapped to. When more than one copy of the section is made, the starting time for the new copy is the previous starting time plus the length of the source range.

For example, suppose the original track contained the following:

1.1:000 Note On	3	C 5	64	0:073
1.2:000 Note On	3	E 6	65	1:010
1.2:060 Note On	3	F 5	40	0:080

If a copy was made with source from 1.2:000 to 1.3:000, with a starting time of 1.4:00 and two copies are made, then the following track will result:

1.1:000 Note On	3	C 5	64	0:073
1.2:000 Note On	3	E 6	65	1:010
1.2:060 Note On	3	F 5	40	0:080
1.4:000 Note On	3	E 6	65	1:010
1.4:060 Note On	3	F 5	40	0:080
2.1:000 Note On	3	E 6	65	1:010
2.1:060 Note On	3	F 5	40	0:080

In the event that you make a mistake performing this command, the Edit Undo command can be used to restore the track.

## Track Split

The **Track Split** command is used to split a track into one or more tracks.

There are four different ways that a track can be split.

**Channel:** specifies that each output track should only contain events on one MIDI channel. If the source track also contains non-MIDI events such as a tempo change, an additional track will be created for these non-MIDI events.

**Event:** each different event type will be split into a separate track. For instance a track containing note events and program changes would be split into two tracks.

**Individual Note:** each output track will only contain one note's events. This would primarily be used when converting a song from one drum machine to another. This will in general create a large number of tracks.

**At:** performs a split at a specified note. The source track will be split into two tracks.

In the event that you make a mistake performing this command, the Edit Undo command can be used to restore the track.

## Track Transform

The Track Transform command is used to transform all events in the selected track, using a mathematical formula. This is really very powerful, and easy to do.

As an example, say you'd like to reduce the velocity of the notes in a track by 10. This is done by selecting Note Velocity as the type of event to transform, and entering -10 as the amount to add.

As another example, say the tempo of a song is too slow. If there's only a couple of tempo events in track zero, the tempo can be edited directly. However, if there are lots of tempo change events, this would get tedious.

To speed up the tempo lets say, 5%, select track zero. Then run Track Transform. Select Song Tempo as the type of event to change, add zero, multiply by 105 and divide by 100. This increases the tempo of all events by 5%.

The event data to be transformed can be any of the following: Note Velocity, Key Pressure, Control Change, Channel Pressure, Pitch Wheel, Song Tempo, Event Start Time or Note Length. If a Control Change event is chosen, a specific controller must also be chosen.

In the event that you experience undesirable results using this command, Edit Undo can be used to restore the track.

For more examples on the possible uses of Track Transform, see [Advanced Techniques for Track Transform](#).

## Track Transpose

The **Track Transpose** command is used to transpose all note events in the track. There are two types of transpositions supported.

A Normal Transposition is performed by adding a number of semitones to each note. This corresponds to a change in the key signature of the track. To transpose up one octave, you must transpose 12 semitones. To transpose down one octave, use -12 instead.

**In Key** transposition is a special type of transposition, where the track is moved up or down without changing the key of the track. For example if a standard C scale is moved up one tone, you get a C scale, all white notes, from D to D.

When performing an **In Key** transposition, you must enter the current key of the song and the number of tones to transpose. A transposition of 7 tones is equivalent to a normal transpose of one octave.

**Suggestion:** A song written in a major key can be converted into a minor key by performing an In Key transpose of -2 tones, followed by a normal transpose of 3 semitones.

In the event that you make a mistake performing this command, the Edit Undo command can be used to restore the track to its original value.

## **File Menu**

The File Menu includes commands that enable you to load songs, save songs, create new songs or merge one, or more, songs into another. For more information about a File Menu command, select one of the following topics.

<u>New</u>	Create a new song.
<u>Open</u>	Loads a song file.
<u>Save</u>	Saves the current song.
<u>Save As</u>	Saves the song under a new name.
<u>Merge</u>	Merges a song into current song.
<u>Import ROL</u>	Import an Adlib ROL file.
<u>Import SysEx</u>	Import a System Exclusive file.
<u>Exit</u>	Exits WinJammer.

For your convenience the last four songs loaded are also displayed on the file menu for quick selection.

## **File New**

The **File New** command is used to clear the current song from memory.

It deletes all tracks, creates a new Track zero for you with a default tempo and time signature, then reinitializes WinJammer to its default start up state.

If you have not saved the last changes you made to the current file, WinJammer will ask you if you would like to save them before clearing the song.

**Short Cut Key: Ctrl+N**



## **File Open**

The **File Open** command is used to load a song from disk. It replaces the current song in memory with the song selected for loading.

If you have not saved the last changes you made to the current file, WinJammer ask you if you would like to save your changes before loading the new song.

This command will load standard MIDI files from a number of sequencers as well as files saved from WinJammer.

Warning messages may occur if any of the following switches are enabled:

Options - Warn if bad MIDI file

Options - Warn if Sysex in file

**Short Cut Key: Ctrl+O**

## **File Save**

The **File Save** command saves the current song using the current file name. If there is no current file name, the **File Save** command is the same as the File Save As command. If a song was previously named using the File Save As command, or if the file was loaded using the File Open command, then the file on disk is overwritten and a backup is created if the Options Create Backup File switch has been selected.

By default, songs are saved as MIDI format 1 files. When there is only one track present in the song, the file is saved as a format 0 file instead. See Saving Type 0 Files for more details on how to create a type 0 file.

Files created by WinJammer can be loaded by many other MIDI software packages.

Warning messages may occur if any of the following switches is enabled:

Options Warn if bad MIDI file

Options Warn if Sysex in file

**Short Cut Key: Ctrl+S**

## **File Save As**

The **File Save As** command saves the current song, after prompting for a file name. If the file name you enter exists, WinJammer will prompt for confirmation before overwriting the file.

By default all songs are saved as MIDI format 1 files. If the song is a single track the file is saved as a format 0 file instead. See [Saving Type 0 Files](#) for more details on how to create a type 0 file.

Files created by WinJammer can be loaded by many other MIDI software packages.

Warning messages may occur if any of the following switches is enabled:

[Options Warn if bad MIDI file](#)

[Options Warn if Sysex in file](#)

**Short Cut Key: Ctrl+A**

## File Merge

The **File Merge** command is used to load another song without losing any part of the current song. This command is used to merge two songs together.

Each track in the song being merged, is added as a new track after the tracks belonging to the current song. If the timebase of the merged song is different from the timebase of the current song, the merged song's timebase is adjusted to match. What this means is that you should make sure that the current song's timebase is correct before performing the merge. Use the Song Timebase command to do this.

When the merge is completed, it is necessary that you merge the tempo and time signature events into track zero using the Track Merge command. If you don't, the tempo and time signatures not in track zero will have no effect on the song. Tempo and time signatures not in track zero should be deleted or your song will not conform to the standard MIDI file specification and you will be warned that you are saving a bad MIDI file next time you save the file. See the Options Warn if bad MIDI file switch for more.

The key of the song being merged will be ignored. The two songs are not adjusted to make sure they are in the same key signature. You will have to do this yourself, by selecting the merged tracks and using the Track Transpose command.

## **File Import ROL**

The **File Import ROL** command is used to import an ROL file, from Adlib or compatible sound cards, into memory. A dialog box is displayed allowing you to select the ROL file to load. Once a selection has been made the file is read into memory.

After the ROL file has been read and scanned a second dialog box will be displayed. Using this dialog box, you can assign appropriate MIDI patch numbers to match the instruments listed in the ROL file. Once you assign patch numbers to all ROL instruments, all of the patch numbers will be added to the converted file. If the Options ROL Save Patches switch is on, the patch assignments will be saved for the next time you wish to import a file.

After the import operation is complete, track zero will contain time signature and tempo change events only. The track name of this track will be the same as the ROL file name.

Each track converted will be named after the first instrument found in the track. The second instrument found will be used as the instrument name. The output track is monophonic, and is assigned to channel one. The only possible events that will be produced are note events, pitch wheel changes and patch changes. The Options ROL Pitch Wheel switch controls whether pitch wheel events are created, or ignored. Since the track volume commands from the ROL file are translated into velocity, you may need to adjust the velocity scale of the tracks using the Track Transform command. Before playing the converted song, you will have to assign appropriate channels to each track by changing the channel numbers in the Track List Window.

## **File Import Sysex**

The **File Import Sysex** command is used to merge a file containing raw system exclusive events, special commands for your sound card or keyboard, into the currently selected track.

Files being imported must be in the format used by the MIDI System Exclusive command. This is a de-facto standard known as MIDIEX format, where the file contains just the raw system exclusive events, without any headers or trailers. This command will ignore any events in the input file that are not system exclusive events.

## **File Exit**

The File Exit command will terminate WinJammer, and return to Windows. If the last changes to the current file have not been saved, WinJammer will ask if you would like to save them before exiting.

**Short Cut Key: Alt+F4**

## **MIDI Menu**

The MIDI Menu includes items that control the way WinJammer responds to various MIDI events.

For more information about a MIDI Menu command, select one of the following topics.

<a href="#"><u>Thru</u></a>	Determines whether MIDI events are echoed thru the device
<a href="#"><u>Record Filter</u></a>	Determine which events to record.
<a href="#"><u>Metronome</u></a>	Configures the Metronome.
<a href="#"><u>Reset</u></a>	Sends MIDI reset sequence on all channels.
<a href="#"><u>Auto Reset</u></a>	Automatically send MIDI reset sequence.
<a href="#"><u>System Exclusive</u></a>	Send and Receive MIDI System Exclusive data.
<a href="#"><u>Sys Ex Customize</u></a>	Customize System Exclusive request strings.
<a href="#"><u>Advanced</u></a>	Advanced MIDI Settings.
<a href="#"><u>Configure</u></a>	Configures the MIDI Device.



## **MIDI Thru Switch**

This switch determines whether MIDI events received are echoed. If this switch is On (checked), all MIDI events received are echoed to the currently selected output device. This effectively changes the MIDI Out ports into MIDI Thru ports.

System Exclusive messages are never echoed. This is due to the fact that Windows buffers MIDI commands before passing them to the program. Because of this, time is lost in buffering large System Exclusive messages and thus echoing System Exclusives is impractical.

The MIDI Advanced dialog is used to specify the output port used for Thru echoing.

## **MIDI Record Filter**

This command is used to determine which events are to be recorded, and which events are to be ignored. The dialog which appears allows you to select the event types which are to be recorded. To record an event type, make sure an **x** appears in the checkbox for that event.

This command only has an effect while recording. It does not affect which events are played, nor does it have any effect on the echoed events if the MIDI Thru switch is enabled.

## **MIDI Metronome**

This command is used to customize the MIDI metronome for your equipment.

The dialog box displayed allows you to select two notes to be used for the metronome. It also allows you to turn the metronome on or off.

In **Accented** mode two notes are used for the metronome. The note labeled "**First Note**" is sent as the first beat in a measure, while the other note is sent for the remaining beats in the measure.

In **On** mode the single note in the "**Other Beats**" box is sent on each beat.

The **Record Only** switch is used to turn the metronome off during playback. When this switch is on, the metronome will only be heard while recording.

**Count In** allows you to specify a count in quarter notes before the song begins playing or recording. You must specify a **Count In** if you are recording using MIDI sync mode. Using a **Count In** time between 4-8 quarter notes will allow for sufficient preparation time.

The **Port** specified here is the output port to send the two metronome notes.

## MIDI Reset

This command causes a MIDI reset sequence to be transmitted on all channels when the command is selected.

The reset sequence actually transmitted is as follows:

CtrlChg		123	0	(All notes off)
CtrlChg		1	0	(Modulation to zero)
CtrlChg		121	0	(Reset all controllers)
CtrlChg		64	0	(Lift sustain pedal)
PtchWhl	0			(Pitch Wheel to center)
Note	all	0		(Turn each note off)

The MIDI Auto Reset switch can be used to force a reset sequence to be sent whenever play or record is stopped.

**Short Cut Key: Ctrl+R**

## MIDI Auto Reset Switch

This switch causes a MIDI reset sequence to be transmitted on all channels when playback is stopped.

The reset sequence actually transmitted is as follows:

CtrlChg	123	0	(All notes off)
CtrlChg	1	0	(Modulation to zero)
CtrlChg	121	0	(Reset all controllers)
CtrlChg	64	0	(Lift sustain pedal)
PtchWhl	0		(Pitch Wheel to center)

The MIDI Reset command can be used to output the reset sequence on demand.

## MIDI System Exclusive

The **MIDI System Exclusive** command is used to send and receive bulk MIDI data. Normally these would be MIDI System Exclusive messages.

The dialog box displayed will allow you to load and save files from disk, move data into and out of the clipboard and send or receive data from the MIDI device. Each of these operations is described here.

### Receiving data from a MIDI Device

The combo-box and **Receive** button are used to receive data from an attached MIDI device. The request string currently shown in the combo-box is transmitted, and the program records everything it receives. The number of bytes received is displayed while recording. To stop recording, press the **Stop** button. The request strings can be customized using the [Sys Ex Customize](#) command. Click here for [more information](#) on some of the System Exclusive request strings included with WinJammer.

### Sending data to a MIDI Device

The **Send** button causes the current contents of the buffer to be transmitted. A delay is inserted between MIDI System Exclusive messages, which can be adjusted using the [Sys Ex Customize](#) command.

### Loading and Saving Data

The **Load** button is used to load a file into the buffer. The **Save** button is used to save the current contents of the buffer in a file. These files are in a standard format, normally known as MIDIEX. This type of file contains raw MIDI data, without any headers or other information. This format is widely used, which allows files to be readily shared.

### Filtering the Buffer

The **Filter** button causes the current contents of the buffer to be examined and all data other than MIDI System Exclusive data to be deleted. This should normally be done after recording a bulk dump.

### Clipboard Support

The **Copy** and **Paste** buttons are used to exchange data with other programs through the Windows clipboard. The **Copy** button causes the current contents of the buffer to be converted into readable ASCII, and placed into the clipboard as a text file. This can then be edited by a program such as Notepad. The **Paste** button performs the reverse, the contents of the clipboard are converted back into raw data, and placed into the clipboard.

The input accepted by **Paste** may contain comments and blank lines as required to make the file more understandable by humans. The following is an example of a valid file.

```
;  
;   The following will set the master volume of a MT32 to 100  
;   Comments are from a semicolon to the end of the line  
;
```

```
;  
;   Blanks, Tabs and New Lines are ignored  
;   UPPER and lower case are allowed in hex numbers
```

```
F0 41 10 16 12 10 00 16 64 76 F7
```

```
;  
;   the following repeats the previous command
```

```
f0 4110161210 0 166476 f7
```

## MIDI Sys Ex Customize

The MIDI Sys Ex Customize command allows you to create or edit system exclusive command strings. These strings are used to cause your MIDI equipment to transmit the current setup using MIDI System Exclusive commands.

Several system exclusive request strings are included for some popular equipment. The system exclusive string must be entered as byte pairs in hex. Refer to your device manual for a listing of system exclusive commands for your device.

The system exclusive customize dialog is shown above. Pressing the **New** button will insert a blank row in the name box and clear the title and sys exec lines. You can then enter a title and system exclusive string. Press the **New** button to create another or the **Ok** button to finish.

This command is also used to customize the settings used in the System Exclusive command. This includes the various dump request commands, the default MIDIEX file extension and the delay between system exclusive commands when transmitting.

The **Delay** value is the amount of time (in milliseconds) to pause between system exclusive messages. The default should be sufficient for most devices, however if your device is having trouble it may be appropriate to increase this value.

The **Port** is the output port to use for the System Exclusive command.

Whenever this command is executed and there are no request strings stored, the strings will be reloaded from the executable file.

## MIDI Advanced

This dialog contains a number of "advanced" switches used to control WinJammer's behaviour. Under normal circumstances, these switches do not need to be used.

### Selecting Ports

This section of the dialog allows you to select the port number to be used for MIDI Thru and **Real Time** events (MIDI Clocks, MIDI Start/Stop/Continue and Song Position Pointer). Refer to the MIDI Configure dialog to determine the port number for each device.

### Timer Resolution

This value defines the highest frequency that the computer's clock is to be run. Under normal circumstances, this should be left at the default of 3 msec (333 times per second). This provides for the best default for most machines.

A higher value will cause the clock to occur less often, causing a lower overhead and better overall performance in Windows. On slow machines, it may be better to use a value of 5 msec. For a 486 or faster computer, a value of one millisecond may work. The lower the number the slower your system will become while playing or recording. Symptoms of a too low number are WinJammer not responding to a stop request, other programs not responding, Windows becoming very sluggish.

### MIDI Messages

The switches in this section control how WinJammer deals with MIDI messages.

The **Wait for MIDI Start** switch determines whether WinJammer responds to or ignores the MIDI real time messages: Start (0xFA), Stop (0xFC) and Continue (0xFB). If the switch is on, a MIDI Stop will cause playing or recording to stop, a MIDI Start or MIDI Continue will cause recording or playback to start. Otherwise a Start or Continue message is ignored. WinJammer makes no distinction between Start and Continue.

If this switch is on, starting play or record will set WinJammer up for the operation, but not actually start it. The Toolbar will show "Waiting..." instead of an elapsed time. When the MIDI Start or Continue is received, this will change to the normal elapsed time display. If a MIDI Stop is then received, play or record will stop.

In order to use this switch, you must have a MIDI input device. This switch is normally used only in MIDI Sync Mode.

The **Send MIDI Clocks** switch determines whether WinJammer will send MIDI Clock messages (0xF8) during playback or recording. MIDI Clocks are used to synchronize with external devices during playback.

The **Send MIDI Start/Stop** switch determines whether WinJammer sends MIDI Start/Continue or Stop messages. If this switch is on, a MIDI Start or MIDI Continue message will be sent when playback or recording is started, and a MIDI Stop message is sent when stopping. A Start message is sent if playback starts at the beginning of the song, otherwise a Continue message is used.

The **Send Song Position Pointer** tells WinJammer to transmit a MIDI song position pointer message before starting playback.

The **Respond to Song Position Pointer** causes WinJammer to jump to the position in the song defined in the message and begin playback.

The **Chase Controllers** switch causes WinJammer to output all non-note event messages that occur before the starting playback position. This allows Sysex messages, as well as other non-note events that configure your devices, to be sent even though you are starting playback from the middle of a song. Normally this should always be enabled. When chasing to a song position pointer message or a SMPTE message, the Chase Controllers switch is ignored because of time restraints.

Tracks are chased in number order. Therefore it is recommended to place all Sysex



messages on low numbered tracks (since these will be chased first).

### **Clock Source**

The **Internal** switch is used to have Winjammer generate its own timing source. This is the normal choice. This means that the song's tempo is determined by the tempo commands contained in the song.

The **MIDI** switch is used when an external MIDI device is to be used as the "master". This external master device must send MIDI clock events 24 times per beat. This is used to control the tempo of all recordings and playbacks. When MIDI Clocking is used, any tempo events in the song are ignored. The tempo control in the Toolbar window is also ignored.

### **Reset to Defaults**

This button will reset some switches to their default values. This will cause all switches to be turned off except for **Chase Controllers**, the clock source to be set to internal clock, and the timer resolution to be changed to 3 msec.

## **MIDI Configure**

This command is used to configure WinJammer for the hardware on your particular machine. You must do this before you can play or record.

The dialog box displayed is used to select the devices to be used. The list of available devices will depend on the drivers you have installed. Simply select the desired input and output devices, then press Ok. It is possible to reconfigure WinJammer whenever you choose.

## **Control Panel**

The Windows Control Panel application is used to configure Windows for your equipment. There are two steps required to set up MIDI devices.

**1. Install the drivers:** The first step is to install drivers for your hardware. This is done through the Drivers icon in the Control Panel. When first started, you will be presented with a list of the installed drivers. Press the Add button to add more drivers to the list. Depending on the driver, you may be asked for the hardware configuration information. Once all of the drivers are added, you will have to restart Windows to make the new drivers available.

**2. Configure the MIDI Mapper:** The MIDI Mapper is a special MIDI output device that is used to remap songs from the General MIDI Specification to whatever equipment you have. You can start the MIDI Mapper by clicking on the icon in the Control Panel. The dialog shown will allow you to select your setup from one of the defaults. If you get a message saying that the current setup references a device that you don't have installed, then you'll have to either edit the configuration or choose a different one. See your Windows manual for more details.

If you are simply playing songs, there is no need to specify an input device. Some operations require an input device however.

## Event Menu

The Event Menu contains a number of commands which perform changes to a note. These commands are only active when the Piano Roll or Event List window are currently selected. For more detailed information, please select any of the following topics.

<u>Edit</u>	Edit the selected event
<u>Insert</u>	Insert new event
<u>Delete</u>	Delete the selected event
<u>Duration</u>	Change the duration of a note
<u>Rest</u>	Insert some empty time
<u>Chord</u>	Make this event start at the same time as the last
<u>Search</u>	Search for an event
<u>Next</u>	Search again for the next event
<u>Previous</u>	Search again for the previous event
<u>Dotted</u>	Length of notes will be increased by 50%
<u>Triplet</u>	Notes are only 2/3 the normal length
<u>Whole Note</u>	Change the selected note to a whole note
<u>Half Note</u>	Change the selected note to a half note
<u>Quarter Note</u>	Change the selected note to a quarter note
<u>Eighth Note</u>	Change the selected note to a eighth note
<u>Sixteenth Note</u>	Change the selected note to a sixteenth note
<u>Thirth-Second Note</u>	Change the selected note to a thirty-second note
<u>Sixty-fourth Note</u>	Change the selected note to a sixty-fourth note

## **Event Edit**

This command is used to edit the **currently selected event**. You must select the event to be edited or the Event-Edit menu item will be greyed out.

A dialog box will be displayed containing the current event. Any changes can then be made to the event.

The Edit Undo command can be used to undo this command.

**Short Cut Key: Enter**

## **Event Insert**

This command is used to insert a new event into a track.

A dialog box is displayed asking what type of event to insert.

Once you have selected an event type, a second dialog box is displayed to allow entry of the event. This second dialog box will be filled in with as much information as is possible from the currently selected event.

There is no requirement to insert events in sequence in the track as WinJammer will automatically find the appropriate location in the track for your new event. If the new event starts at the same time as the currently selected event, it will be inserted **before** the currently selected event.

The Edit Undo command can be used to undo this command.

**Short Cut Key: Ins**

## **Event Delete**

This command is used to delete the currently selected event.  
The Edit Undo command can be used to undo this command.

**Short Cut Key: Del**

## Event Duration

This command is used to adjust the length of the current note, and the start time of all subsequent events.

A dialog box is displayed asking for the duration of the current note. Enter the note's desired length, in ticks which is dependent on the current Timebase, which is displayed for you. The length of the note will be set to one tick less than the entered time, and the start time of all events following it in the track will be adjusted to the entered time.

For example, assume that the current timebase was 120, and the track contained the following:

1.1:118 Note On	3	C 5	64	0:073
1.2:112 Note On	3	E 6	65	1:010
1.3:049 Note On	3	F 5	40	0:080

If a duration command was performed on the first event, setting the duration to 1:000 (one quarter note), the result would be:

1.1:118 Note On	3	C 5	64	1:000
1.2:118 Note On	3	E 6	65	1:010
1.3:055 Note On	3	F 5	40	0:080

### Short Cut Key: Ctrl + D

There are also short cut keys for some of the common duration commands. These are:

<u>Dotted</u>	Make dotted notes
<u>Triplet</u>	Make triplets
<u>1</u>	Turn current note into a whole note
<u>2</u>	Turn current note into a half note
<u>3</u>	Turn current note into a quarter note
<u>4</u>	Turn current note into a eighth note
<u>5</u>	Turn current note into a sixteenth note
<u>6</u>	Turn current note into a thirty-second note
<u>7</u>	Turn current note into a sixty-fourth note

## Event Rest

This command is used to add time to the start time of the current event.

A dialog box is displayed asking for the length of the rest. Enter the desired rest length in ticks, depending on the current Timebase, which is displayed for you. The amount entered will be added to the start time of the current event, and all subsequent events in the track.

For example, assume that the current timebase was 120, and the track contained the following:

1.1:118 Note On	3	C 5	64	0:119
1.2:118 Note On	3	E 6	65	1:010
2.3:055 Note On	3	F 5	40	0:080

If a rest command was performed on the first event, entering a value of 0:2, the result would be:

1.2:000 Note On	3	C 5	64	0:119
1.3:000 Note On	3	E 6	65	1:010
1.4:057 Note On	3	F 5	40	0:080



## Event Chord

This command is used to adjust the start time of the current event to be the same as the start time of the previous event, creating a chord.

If this command is executed on the first event in a track, the start time of the event is set to zero.

For example, assume that the current timebase was 120, and the track contained the following:

1.2:000 Note On	3	C 5	64	0:119
1.3:000 Note On	3	E 6	65	1:010
1.4:057 Note On	3	F 5	40	0:080

If a rest command was performed on the first event the result would be:

1.1:000 Note On	3	C 5	64	0:119
1.2:000 Note On	3	E 6	65	1:010
1.3:057 Note On	3	F 5	40	0:080

**Short Cut Key: Ctrl + C**

## **Event Search**

This command is used to search for an event type in the current track. When the command is used, a dialog box is displayed asking for the event type to search for. The track will then be searched for the next event of the selected type.

The Next and Previous commands can be used to quickly search for the next or previous occurrence of the event.

## **Event Next**

This command is used to search for the **next** occurrence of an event in the current track. The event type to search for is selected through the Search command. This command will search forward in the current track looking for an event of the correct type, the default event is Program Change. If one is found, then the track is positioned at the event.

**Short Cut Key: Ctrl + F**

## **Event Previous**

This command is used to search for the **previous** occurrence of an event in the current track. The event type to search for is selected through the Search command. This command will search backward in the current track looking for an event of the correct type, the default event is Program Change. If one is found, then the track is positioned at the event.

**Short Cut Key: Ctrl + P**

## **Event Dotted Switch**

This switch modifies the current quick duration commands so that the durations that they specify are increased by half. If this switch is on, a quick duration of a Half Note is equal to three beats instead of two.

If this switch is on and the Triplet switch is also on, then the quick duration commands are normal. This is because the Triplet switch decreases the duration by  $\frac{2}{3}$  and the Dotted switch increases the duration by  $1 \frac{1}{2}$ .

**Short Cut Key: Ctrl + .**

## **Event Triplet Switch**

This switch modifies the quick duration commands so that the durations that they specify are decreased. If this switch is on, three notes will fit in the time that two notes would have fit in before.

If this switch is on and the Dotted switch is also on, then the quick duration commands are normal. This is because the Triplet switch decreases the duration by  $\frac{2}{3}$  and the Dotted switch increases the duration by  $1 \frac{1}{2}$ .

**Short Cut Key: Ctrl +T**

## **Event Whole Note**

This command is a quick way of specifying a Duration of 4 times the current Timebase for the currently selected note. In 4/4 time, this would equal one whole note.

**Short Cut Key: Ctrl + 1**

## **Event Half Note**

This command is a quick way of specifying a Duration of two times the current Timebase for the currently selected note. In 4/4 time, this would equal one half note.

**Short Cut Key: Ctrl + 2**



## **Event Quarter Note**

This command is a quick way of specifying a Duration equal to the current Timebase for the currently selected note. In 4/4 time, this would equal one quarter note.

**Short Cut Key: Ctrl + 3**

## **Event Eighth Note**

This command is a quick way of specifying a Duration of half the current Timebase for the currently selected note. In 4/4 time, this would equal one eighth note.

**Short Cut Key: Ctrl + 4**

## **Event Sixteenth Note**

This command is a quick way of specifying a Duration of one quarter of the current Timebase for the currently selected note. This is normally equal to one sixteenth note.

**Short Cut Key: Ctrl + 5**

## **Event Thirty-second Note**

This command is a quick way of specifying a Duration of one eighth of the current Timebase for the currently selected note. This is normally a one thirty-second note.

**Short Cut Key: Ctrl + 6**

## **Event Sixty-fourth Note**

This command is a quick way of specifying a Duration of one sixteenth of the current Timebase for the currently selected note. This is normally a one sixty-fourth note.

**Short Cut Key: Ctrl + 7**

## **Events**

The following is a list of MIDI events it is possible to have in a track.

Tempo

Time Signature

Meta Text

Note On

Key Pressure

Controller Change

Program Change

Channel Aftertouch

Pitch Wheel

System Exclusive

## **Tempo**

This event specifies how fast the song plays.

The **Time** is the starting time for the event.

The **Tempo** is the speed to play the song (measured in beats per minutes). Fractional tempos are supported. Winjammer supports tempos between 8 and 350 beats per minute.

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

A Standard MIDI File contains **Tempo** events only in track zero. Winjammer will ignore **Tempo** events that do not occur on track zero. If the Warn if bad MIDI file switch is on, the song is checked to ensure that tempo changes only occur in track zero.

## Time Signature

This event sets the current time signature for the song.

The **Time** is the starting time for the event.

The **Numerator** is the number of beats per measure. Valid values are between 1 and 128.

The **Base** is the type of note to use as a beat. Valid values are whole notes through 128th notes.

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

A Standard MIDI File contains Time Signature events only in track zero. WinJammer will ignore Time Signature events that do not occur on track zero. If the Warn if bad MIDI file switch is on, the song is checked to ensure that time signature changes only occur in track zero.

WinJammer will issue a warning if Time Signature events do not occur at the end of a measure. If there is a Time Signature event before the end of a measure, the Time Signature event doesn't feel happy and creates a fuss. Change the time format to "beat notation" (0:000) using Options Preferences, and edit the event.

The current time signature is always displayed on the status bar of WinJammer's main window.



## Meta Text

This event is used to enter text into a MIDI file.

The **Time** is the starting time for the event.

The **Type** is the type of text event to insert. There are a number of different types, as listed below.

The **Text** area is where the text is actually entered. In this area, the Enter key will end the current line, rather than end the dialog. Press Ctrl+Enter to end the dialog, or press Tab to move out of the text entry box.

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

### Text Event Types

There are a number of text event types defined by the MIDI File Specification. WinJammer supports them all. This is a list of the various types, along with the meaning taken from the MIDI File Specification.

© is a Copyright text event. This should contain the characters (C), the year of the copyright and the owner of the copyright. This event type should be at time zero, normally in track 0 or track 1.

**Cue Pt** is a Cue Point text event. This is a description of something happening on a film, video screen, or on stage at this point in the musical score.

**InsName** is the Instrument Name text event. This is a description of the type of instrumentation to be used in this track at this time. The first event of this type occurring in the track at time zero will be displayed in the Track List window.

**Lyric** is the Lyric text event. This is a lyric to be sung. Generally, a syllable or word will be a separate lyric event, placed at the appropriate time in the song.

**Marker** is a Marker text event. This normally occurs on track zero or one only, and contains the name of that point in the sequence ("First Verse", "Chorus" etc).

**Text** is a Text event. This is described as "Any amount of text describing anything". This is a general purpose event, to be used for whatever seems appropriate. The first Text event occurring on a track at time zero may be used as the track name if a Track Name event hasn't been seen yet. This is because some sequencers use text events instead of Track Name events.

**TrkName** is a Sequence/Track Name text event. If this occurs in track zero, then it is considered to be the name of the sequence, otherwise it is the name of the track. This event will be displayed on the Track List window if it occurs at time zero, before any Text events.

## Note On

This is the most common event - a Note Event.

The **Time** is the starting time for the event.

The **Channel** is the MIDI Channel to send the event on. Normally, channel 10 is reserved for drum sounds.

The **Key** is the note to play. When entering a note name, use either the **+** or **#** keys for a sharp, and either **-** or **b** for a flat. If so desired, a number can be entered instead of a note name - this is useful when entering drum notes.

The middle C octave number and patch base can be set using the [Options Preferences](#) command.

The **Velocity** is the speed that the note was played (with a velocity sensitive keyboard). This is normally interpreted as the loudness of the note. Values range from 1 (quiet) to 127 (loud).

The **Length** is the length or duration of the note. When entering the length of a note, the notation "/4" is accepted (for a quarter note). Other values are /1 for a whole note, /2 for a half note, /8 for an eighth note etc.

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

## **Key Pressure** (also known as Key Aftertouch)

Key Pressure is a rare event. Some keyboards have the ability to sense the pressure applied to each key after the initial key press. This event is used for this. Also see [Channel Aftertouch](#).

The **Time** is the starting time for the event.

The **Channel** is the MIDI Channel to send the event on. Normally, channel 10 is reserved for drum sounds.

The **Key** is the note. When entering a note name, use either the **+** or **#** keys for a sharp, and either **-** or **b** for a flat. If so desired, a number can be entered instead of a note name - this is useful when entering drum notes.

The **Pressure** is the pressure value of the note. This can be interpreted by various MIDI equipment as many things. Values range from 0 (low pressure) to 127 (high pressure).

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

The middle C octave number and patch base can be set using the [Options Preferences](#) command.

## Controller Change

The Controller Change event is used for adjusting various characteristics of the sound.

The **Time** is the starting time for the event.

The **Channel** is the MIDI Channel to send the event on. Normally, channel 10 is reserved for drum sounds.

The **Controller #** is the controller to change. This can be entered by typing in the controller number directly, or selecting a controller from the supplied list.

The **Value** is the value for the controller. Values range from 0 (low) to 127 (high). A list of common controllers follows.

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

### Common Controllers

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Controllers 0 to 31 and 32 to 63 are pairs - zero is the MSB (most significant part) of the 14 bit controller pair 0 and 32. Most often, only the MSB portion is ever used, providing a range of 0 to 127.

**1 Modulation Wheel:** supported by most devices. This message causes various changes depending on the device. It will often cause a modulation in pitch, or a vibrato.

**7 Volume:** most devices support this message. This is used to set the volume of all events currently sounding on the channel. A volume of 127 is maximum volume.

**10 PanPot:** the stereo position of the channel. Zero, 0, is hard left, 64 is centered and 127 is hard right.

**11 Expression:** this is similar to a volume message. Expression works within the current volume setting, and in general is used in preference to volume. Normally, it is best to set the volume once per program change, then control volume with expression messages.

**64 Damper Pedal (Sustain):** this corresponds to a damper pedal on an acoustic piano. A value of 0 is "up", and 127 is "down". When down, a sustain pedal will cause all note lengths to be increased until the time the pedal is released.

## Program Change

A Program Change (also called a Patch Change) is used to select the type of instrument to play on the channel.

The **Patch Name** listbox will contain the General MIDI name of each patch.

The **Sort by Name** checkbox determines whether the patch names in the **Patch Name** listbox are sorted alphabetically, or whether they're in numeric order.

The **Time** is the starting time for the event.

The **Channel** is the MIDI Channel to send the event on. Normally, channel 10 is reserved for drum sounds.

The **Patch #** is the patch number for the event.

The **Bank** field is an optional bank number used to select more than 128 patches. Only some MIDI equipment such as the Roland Sound Canvas will support this. Banks are set using Control Change events, using controller number zero.

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

## **Channel Aftertouch** (also known as Channel Pressure)

This is a fairly rare MIDI event. Some keyboards will transmit changes in the pressure applied to keys after the initial key press using this message. It is similar to the Key Pressure event, except that changes in individual keys are not transmitted.

The **Time** is the starting time for the event.

The **Channel** is the MIDI Channel to send the event on. Normally, channel 10 is reserved for drum sounds.

The **After Touch** is the pressure/after touch for the channel. Values range from 0 (light pressure) to 127 (heavy pressure).

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

## **Pitch Wheel**

A Pitch Wheel is used to "bend" (shift) the pitch of notes.

The **Time** is the starting time for the event.

The **Channel** is the MIDI Channel to send the event on. Normally, channel 10 is reserved for drum sounds.

The **Pitch Wheel** is the pitch wheel position. Values range from -8192 (note sounds low) to 8191 (note bent high). Centered is zero.

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

## System Exclusive

System Exclusive messages are a manufacturer's specific means of storing equipment specific information in a song.

The **Time** is the starting time for the event.

The **Type** is the type of event - System Exclusive, or System Exclusive continued. The continued message is rare, but this is a way of splitting a single MIDI System Exclusive (also called SysEx) across multiple events.

The edit box labeled **System Exclusive** is the place to enter the actual SysEx data. This is entered in hex. The leading F0 byte to start the System Exclusive message must not be entered - that's included as part of the command (depending on whether this is a continued event or not). Unless the message is to be continued with another event, the last byte of the message should be a F7.

The **Shift Following Events** is used to cause events following this one in the track to be moved in time if the starting time for this event is changed.

Caution should be used with System Exclusive events - it is possible to space them too closely together, causing other events in the song to be played at the wrong time. Some instruments do not work well with system exclusive messages inside songs. Others like the Roland Sound Canvas, provide many small messages which can be used to make changes to the sound while a song is playing.

Although system exclusives are supported by the MIDI file specification, many sequencers do not support system exclusive messages inside standard MIDI files - indeed, many will delete them from MIDI files. For this reason, the Warn if Sysex in file switch will cause a warning to appear whenever a file containing system exclusive messages is loaded or saved.

It is suggested that System Exclusive events be placed in track one. This ensures that controller chasing (see the MIDI Advanced command) will operate properly.



## **Song Menu**

The Song Menu is used to edit and set some options that affect the entire song.

For more information about a Song Menu command, select one of the following topics.

Timebase            Sets the timing resolution for a new song.

Song Key            Sets the key signature for the song.

General MIDI       Marks current song as being Microsoft General MIDI.

## **Song Timebase**

This command sets the number of ticks per quarter note used in a song. This affects the resolution of a song's timing. A timebase of 120 (the default) means that each quarter note is divided up into 120 parts (ticks).

The song's timebase can be set or changed at any time. When the timebase is changed, all events are adjusted to conform to the new timebase. A note that was a quarter note before will start at the same time, and still be a quarter note.

When a ROL file is imported, or when you load a file from another sequencer, you may get an error message when you try to play the song saying that the timebase is invalid. If this occurs, simply adjust the timebase to one of the values listed in the **Song Timebase** dialog box. If in doubt as to what to choose, try 120.

The higher the timebase, the faster the clock used to play back the song must run. This can affect other applications running at the same time. At a timebase of 120, with a tempo of 100 beats per minute, the clock must run at 5 msec (200 times per second). At a timebase of 480, the same song would run the clock at 1 msec intervals (1000 times per second). A clock this fast is a heavy burden on Windows - see the MIDI Advanced dialog for a way to set a maximum clock speed.

This command can be undone using Edit Undo command.

## **Song Key**

The **Song Key** command is used to specify the current song's key signature. Currently only a single key signature can be used for a song, although it can be changed anytime.

The key signature is used to determine the name of each note in the **Event List** window. It is also used to determine the color and placement of the note on the staff in the **Piano Roll** window.

For example, if the key signature was G (one sharp), then the names of any accidentals would be changed to reflect a sharp rather than a flat (C# instead of Db). In the **Piano Roll** window, an F# would now be displayed as a normal note rather than an accidental.

This command has no effect on anything other than how the notes are displayed.

Changing the key signature will not cause any tracks to be automatically transposed.

The current key signature is displayed on the bottom right corner of the **Piano Roll** window. Double clicking on the key signature displayed there will run this command.

## **Song General MIDI Switch**

This switch is used to mark the current song as a Microsoft General MIDI song. This causes a special meta event to be added to the song when it is saved. The Microsoft Media Player program will issue a warning before playing any song that does not have this special marker. The only purpose of this switch is to suppress this warning.

A song with this marker should conform to Microsoft's Authoring Guidelines for MIDI files. This requires two copies of the song - one in channels 13, 14 and 15 with drums in 16, and a second in channels 1-9 with drums in channel 10. The CANYON.MID sample song that comes with Windows is an example of this kind of a song. For more information on Microsoft's Authoring Guidelines for MIDI files, see the [Microsoft MIDI Mapper](#) topic.

## Options Menu

The Options Menu contains various switches and dialogs which allow you to customize WinJammer.

Most of these options are stored when you exit WinJammer so that next time you use WinJammer you do not have to customize WinJammer again.

For more information about one of the Options Menu commands, select one of the following topics.

<u>Preferences</u>	Set preferences for WinJammer.
<u>Sound Event</u>	Sound events as they are selected.
<u>Warn if bad MIDI File</u>	Display warning if saving a non-standard MIDI file.
<u>Warn if SYSEX in file</u>	Display warning if System Exclusive messages are in the file.
<u>Create Backup Files</u>	Automatically create backup file when saving a file.
<u>Warn if Patch Cache Fails</u>	Warn if some patches cannot be cached.
<u>ROL Pitch Wheel</u>	Translate MIDI Pitch Wheel events in ROL files.
<u>ROL Save Patches</u>	Save instrument mapping in ROL files.

## Options Preferences

The **Options Preferences** Command is used to customize WinJammer to your machine and preferences. The following changes can be made.

**Patch Base** controls the first patch number used by your MIDI instrument. This only affects the way patch numbers are displayed and entered. Some companies such as Roland and Casio number their patches from 1 through 128, while other manufactures, like Yamaha, number patches from 0 through 127. Default is 1.

**Middle C Octave** controls the octave number assigned to middle C. Again different manufactures have chosen to use different notation, so WinJammer allows you to choose which ever octave is better for you. For example Yamaha uses C3 for middle C, while Roland uses C4. Default is C5.

**Velocity Scale** is an amount used, to divide a note's velocity by, to determine the height of the line to display. A scale amount of 1 will cause the velocity area of the Piano Roll screen to be larger than it would be with a scale of 4. Default is 4.

**Time Format** is the format to use when displaying event start times. There are five formats supported: 0:000 will display everything in "beats", where one beat is equal to a quarter note. The other four formats display in a measure.beat:ticks notation. The differences are whether the first measure/beat is numbered starting at zero or starting at one. The default time format is 1.1:000 which displays measures starting at measure one.

## **Options Sound Event**

This switch is used to determine whether WinJammer should play each note as it is selected in either the Event List or Piano Roll windows.

If this switch is on, as each event is selected in the Event List or Piano Roll windows, the event is sent as well. If the event is a note event, the length of the note will be about half a second. If you move rapidly between notes, the last note will be cut off to avoid slowing your movement down.

The default is enabled.

## **Options Warn if Bad MIDI File**

This option controls whether or not WinJammer will display a warning when saving a file that doesn't meet the MIDI File Specification.

If enabled, this will cause WinJammer to warn if tempo changes and time signature changes are seen in any track other than track zero. It will also cause a warning if track zero contains any events other than system exclusive, text events, tempo changes or time signature changes.

This switch defaults to on. It is strongly recommended that this be left enabled. Some sequencers are not able to properly deal with songs with misplaced events.



### **Options Warn if SysEx in File**

Selecting this option will cause WinJammer to warn the user if any System Exclusive events are present when loading or saving a song.

Many sequencers do not support system exclusives in MIDI files. System Exclusive messages are by nature limited to a single instrument, and are not generally of interest to people with different equipment.

The default is off.

## **Options Create Backup Files**

Selecting this switch will cause Winjammer to automatically create a backup when saving a file. When this is on, the old file will be renamed to end in ".BAK", then the new file will be written.

The default for this switch is on.

## **Options Warn if Patch Cache Fails**

Selecting this option will cause WinJammer to warn the user if any Melodic patches fail to load. This will normally happen if there is not enough memory on the target device to hold all of the patches.

This switch only applies when a device (such as a Gravis UltraSound) that requires patch caching is being used. Because of problems with the Gravis implementation of drum patch caching, it is not possible to warn if drum caching fails. Because of limitations with the MIDI Mapper, it is possible for patch caching to fail when it is used - it is best to avoid the MIDI Mapper if possible when patch caching is required. WinJammer will always warn you if you have a patch selected for channel 10 as this is the drum track - this is due to a problem with the Gravis drivers.

The default for this switch is off.

## **Options ROL Pitch Wheel Switch**

The **Options ROL Pitch Wheel** switch is used to determine whether MIDI Pitch Wheel events are to be generated when importing a ROL file.

If this switch is on (checked), then Pitch Wheel events will be generated when a ROL file is imported with the File Import ROL command. All ROL files contain pitch wheel events, which if translated often cause the resulting MIDI file to sound wrong. Under normal circumstances, it is probably best to turn this switch off. If you wish to remove pitch wheel events after the file has been imported, the Track Filter Events command can do this.

## **Options ROL Save Patches Switch**

The **Options ROL Save Patches** switch controls whether the patch re-mapping specified when importing a file will be saved in the INI file.

When a ROL file is imported with the File Import ROL command, a dialog box is displayed which allows you to specify MIDI patch numbers for each of the instruments in the original ROL file. If this switch is on (checked), then when Ok is pressed to apply this re-mapping, then the assignments you have made will be kept for next time. Over time, this will make importing ROL files easier, since the proper assignment of patches is already known.

## Window Menu

The Window Menu contains controls to save window settings and which manipulate window arrangement.

WinJammer is a Multiple Document Interface (MDI) application. WinJammer contains a "frame" window in which other windows can appear, each containing differing views of the current song.

For more information about one of the items on the Window menu, select one of the following topics.

Save Settings on Exit Save the window positions before exiting

Restore Settings Restore window positions to saved positions

Save Settings Now Save window positions now

Cascade Place open windows in an overlapping cascaded display

Tile Vertically Tile open windows vertically

Tile Horizontally Tile open windows horizontally

Arrange Icons Arrange the icons along the bottom of the window

Track List Display Track List Window

Event List Display Event List Window

Piano Roll Display Piano Roll Window

Audition Patches Display Audition Patches Window

## **Windows Save Settings on Exit**

Selecting this switch will cause WinJammer to save the current size and location of each of the windows whenever you exit WinJammer. The next time WinJammer loads, the windows will be placed in the same position as they were when you exited.

The Restore Settings command will restore a saved position whenever asked. The Save Settings Now command will save settings without having to exit WinJammer.

## **Windows Restore Settings**

Selecting this command will cause WinJammer to restore the window settings to the last saved value. The window settings include the size and location of each of WinJammer's windows.

The settings are saved using either the Save Settings on Exit command or the Save Settings Now command.



## **Windows Save Settings Now**

Selecting this command will cause WinJammer to save the current size and location of each of the windows. The next time WinJammer loads or the Restore Settings command is used, the windows will be placed in the same position as they were when you executed this command.

The Save Settings on Exit command will save the window settings whenever WinJammer is exited.

## **Windows Window Positioning Options**

**Cascade:** Selecting this will cause the open windows to arrange in an overlapping pattern

**Tile Vertically:** Selecting this will cause the open windows to place themselves in a vertical tiled pattern.

**Tile Horizontally:** Selecting this will cause the open windows to place themselves in a horizontal tiled pattern.

**Arrange Icons:** Selecting this will cause all of the windows that are minimized to arrange themselves along the bottom of the WinJammer Window starting from the left side.

## Track List Window

This window displays the tracks in the song. It is also used to edit some information for the song, mute tracks and select which tracks are to be operated on.

### The Fields Displayed

The first column displays the **Track Number**. The first track in the song is labelled number zero - this is known as track zero, and has special meaning. Some commands (such as the Edit New Track command) will not operate on track zero. This track should only contain text events, system exclusive messages, tempo change events, and time signature events.

The **Track Name** and **Instrument Name** fields are simply descriptive entries, used to identify the tracks in the song. These are taken from text events stored in the MIDI File.

The **Channel** and **Port** columns display the current port and channel for the track. It is possible for a track to contain no channel MIDI data, in which case "none" is displayed. It is also possible for a track to contain data on multiple channels - in this case "Mult" is displayed instead. To change the channel or port number for a track (or group of tracks) simply select the channel/port number to change, and type in the desired value. All events on the track will be set to the entered value.

The **Patch Name & Number** column displays "none" if there are no patch change events in the track, or "Multiple" if more than one patch change exists on the track. If all events on the track use the same MIDI Channel, pressing enter or double clicking on the program name will allow a new patch to be selected. If a new patch is chosen using this dialog, all existing patch change events in the track will be deleted, and a new event will be inserted at the beginning of the track.

The column displays the state of the track. If this column displays a the track will be played. If the column displays a "m", the track is muted. Double clicking, pressing enter, or m will cause the mute state of the selected tracks to be toggled. The o or s key will solo the selected tracks - all other tracks will be muted.

The last two columns are simply for information. The **Time** column displays the last measure number in the track, and the **Events** column displays the number of events in the track.

### Selecting Multiple Tracks

Many operations can be performed on a group of tracks rather than on a single track. This includes most of the commands on the Track menu, as well as changes performed on the **Track List** window itself.

To select a group of tracks using the mouse, simply click on the first track to select, then drag to the last track desired. Pressing Ctrl while clicking on a track will toggle the current selection state of the track. The Shift key in combination with clicking on a track will select all tracks between the last position and the track being clicked on.

To select a group of tracks using the keyboard, simply press Shift while moving up or down, and each track will be selected. To select a non-contiguous track, press Shift+F8, then move up/down to the track to toggle and press space. A second Shift+F8 will toggle back into normal cursor movement.

## Event List Window

This window is used to edit the contents of the current track. The events in the track are displayed in a list format, so all events in the track can be edited and viewed in this window.

The track displayed is the one shown on the toolbar, and is known as the current track. Events are selected in the **Event List** window by moving the select bar to the desired event. The list can be scrolled using the scroll bar or normal Windows scrolling keys. The various editing commands in the Event menu are available when using the **Event List** window.

### Event List Abbreviations

In the **Event List** screen different abbreviations are used to depict the various event types. The following is a list of the abbreviations used and where appropriate, their MIDI status byte.

<b>Tempo</b>	Tempo Event
<b>TimeSig</b>	Time Signature
<b>Text</b>	General Purpose Text
©	Copyright Notice
<b>TrkName</b>	Sequence/Track Name
<b>InsName</b>	Instrument Name
<b>Lyric</b>	Lyric to be sung
<b>Marker</b>	Name of a point in the sequence
<b>Cue Pt</b>	Cue Point
<b>Note On</b>	MIDI Note On event: 0x9n
<b>KeyPres</b>	MIDI Key Pressure (Key After Touch): 0xAn
<b>CtrlChg</b>	MIDI Control Change: 0xBn
<b>Pgm Chg</b>	MIDI Program (patch) Change: 0xCn
<b>CnIPres</b>	MIDI Channel Pressure (After Touch): 0xDn
<b>PtchWhl</b>	MIDI Pitch Wheel (Bender): 0xEn
<b>Sys Ex</b>	MIDI System Exclusive Message: 0xF0

## Piano Roll Window

This window is used to display and edit the contents of the current track. The track's note events are displayed in a graphical format, similar to both standard musical notation and "piano roll" notation.

Each note event is shown in a standard musical staff as a rectangle. The vertical position of the rectangle is the correct location on the staff, depending on the Song Key. The note's starting time determines the start of the rectangle, and the width of the rectangle is determined by the length of the note. Accidentals (sharps and flats) are shown in a second colour.

The screen can be scrolled horizontally or vertically using the scroll bars. If some notes are not being displayed because the window is too small, the window can be resized so that they may be seen. The status line on the bottom of the window shows information about the currently selected notes.

The two spin buttons on the bottom right corner of the window are used to adjust the number of notes and measures shown. The horizontal spin button adjusts the number of measures shown in the window at a time. The vertical spin button adjusts the height of each note's rectangle, and hence the number of notes that can be shown at once.

Most of the WinJammer Commands are available when using the **Piano Roll** window, including those on the Event menu.

Try clicking on the **Right Mouse Button** to access the Piano Roll Popup Menu. This menu contains a number of commands specific to the **Piano Roll**.

Only note events are shown on the **Piano Roll** window. To see all events in the track, use the Event List window.

## Audition Patches Window

The **Audition Patches** window is used to display and change patches in a song while it is playing.

The **Patch Name** list box contains a list of the patches for the General MIDI patch set. Select the proper **Channel** and **Port** you wish to affect. The port number is the number assigned to the device when you did a MIDI Configure. You may select a patch by clicking on a patch name in the patch names list box or by typing in a patch number in the **Patch #:** window. Alternatively you may use the spin button beside the **Patch #:** window to increment or decrement the current patch number.

If you would like to experiment with different patches while the song is being played, you can edit the patch number for any MIDI channel. Simply input the new patch number, and it will be sent out that channel.

The patch number for any channel may also be changed when the song is not playing. The patch number entered is immediately sent to the device.

The **Ignore Patches in Song** switch controls whether the patches contained in the song are to be sent. If this switch is on, then the patches in the song are filtered from the tracks as the song is played. This allows you to easily audition the patches in the song without having to edit the individual tracks.

The **Test** button will play a chord on the selected port and channel. This plays a C-major chord as long as the button is held down.

## **Piano Roll Popup Menu**

The Piano Roll popup menu is displayed by clicking the right mouse button anywhere on the Piano Roll. The menu will appear at the cursor location. The following items are displayed:

- Select**      Cursor is used to select notes
- Draw**        Cursor is used to draw new notes
- Erase**        Cursor is used to select notes to erase
- Snap**         Enable/Disable Snap Mode
- Snap To**     Time interval to Snap To
- Length**      Select Length of new notes
- Options**     Set Options for window

In addition to the popup menu, there are a number of keys used in the Piano Roll:

- Keys**         Keys used in the Piano Roll

## Piano Roll Select Mode

This is the normal mode for the cursor. This mode is used when selecting notes on the **Piano Roll** for editing.

There are three cursors used in select mode.

An arrow cursor is displayed when the cursor is over an area of the track that does not contain a note.



The arrow cursor is replaced with a hand cursor when the cursor is moved onto a note.

When a hand cursor is displayed, clicking on the note and dragging it will move the cursor in time, and transpose the note up or down. Pressing and releasing the right mouse button while the left button is down on a note will toggle between the normal and accidental note for this position on the staff. While dragging the note(s), the new position is displayed on the **Piano Roll** window's status bar.

When a note is selected, moving the cursor to the right end of the selected note will cause the cursor to switch into a double headed arrow. Clicking and moving in this mode will change the length of the selected note. If **Snap** mode is on, the length will be adjusted to the closest snap position. The status bar will show the new length for the note.

The middle mouse button (if you have a three button mouse) will toggle the cursor between **Select** mode, **Draw** mode and **Erase** mode.



## Piano Roll Draw Mode

This mode is used to draw new notes on the **Piano Roll**. The new notes created have a channel matching the current track, and a velocity of 64. The length of the note is determined by the current Length set using the right mouse button popup menu.



If there is no note under the cursor, a quill cursor is displayed, and the current position is displayed on the status bar. Clicking with the left button will drop a new note at the current position.

If the cursor is on top of a note, it switches to a hand cursor. Clicking and dragging the cursor will cause the note to be dragged around the window, changing the note and starting time. Whenever a new note is dropped, the cursor automatically switches into the hand cursor, so that it is easy to fix up any misplaced notes. Pressing and releasing the right mouse button while the left button is down on a note will toggle between the normal and accidental note for this position on the staff.

The middle mouse button (if you have a three button mouse) will toggle the cursor between **Select** mode, **Draw** mode and **Erase** mode.

## Piano Roll Erase Mode

**Erase** mode is used to delete notes from the track. This can also be accomplished by selecting the note using **Select** mode, and running the Event Delete command or pressing the **Del** key.



There are two cursors used in **Erase** mode. When the cursor is over a note, a bomb is displayed on the note. Clicking and releasing the left mouse button on the note will delete it. When the cursor is not on a note, a bomb is displayed along with an arrow.

In the event that something is inadvertently deleted, the Edit Undo command (**Ctrl+Z** key) will reverse the last command.

The middle mouse button (if you have a three button mouse) will toggle the cursor between **Select** mode, **Draw** mode and **Erase** mode.

## **Piano Roll Keys**

The **Piano Roll** is only partially usable without a mouse. However, the following keys will operate on the **Piano Roll**.

**PgUp** Move the current selection up one octave

**PgDn** Move the current selection down one octave

**Up Arrow** Move the current selection up by one semitone

**Down Arrow** Move the current selection down by one semitone

**Tab** Move to the next note in the track

**Shift+Tab** Move to the previous note in the track

## Piano Roll Snap and Snap To

The **Snap** option makes it easier to align notes so that they start at an exact time. The **Snap** switch determines whether **Snap** mode is enabled or disabled. The **Snap To** menu item is used to determine what the snap interval is. This interval can be:

- Whole Notes
- Half Notes
- Quarter Notes
- Eighth Notes
- Sixteenth Notes
- Thirty-second Notes
- Sixty-fourth Notes

If an eighth note is current selected as the **Snap To** interval, and **Snap** is enabled, all new notes drawn on the **Piano Roll**, and all notes dragged to a new time will be guaranteed to start at an eighth note boundary. This interval is not affected by the **Dotted** or **Triplet** options.

## Piano Roll Length

The **Length** submenu of the **Piano Roll** popup menu is used to determine the length for new notes drawn in Draw mode.

The options available are:

- Dotted
- Triplet
- Whole Notes
- Half Notes
- Quarter Notes
- Eighth Notes
- Sixteenth Notes
- Thirty-second Notes
- Sixty-fourth Notes

The **Dotted** and **Triplet** switches are modifiers to the selected note length. These are the same as the Dotted and Triplet switches on the Event menu. **Dotted** turns a note into a dotted note - that is, it lengthens the note by a half. The **Triplet** switch shortens the note so that three notes will fit into the space where two fit before. Thus, three eighth note triplets are the same length as a single quarter note.

## Piano Roll Options Menu

The Piano Roll Options selection contains the following commands that allow you to customize the piano roll.

Display Sharps/Flats Selects how notes are shown

Colour Selects colours used

Relative Slides all notes when start time adjusted

Velocity Shows velocity of notes

Dashed Lines Displays dashed lines

Treble Clef Displays Treble Clef

Bass Clef Displays Bass Clef

Alto Clef Displays Alto Clef

Sound Event Sounds notes when they are selected

## **Piano Roll Options Display Sharps/Flats**

The **Display Sharps/Flats** command allows you to select how notes are to be displayed on the **Piano Roll**. Since the **Piano Roll** displays notes on a normal musical staff, the current song key is needed to determine which notes are in the key, and which notes are accidentals.

There are three options. The **Key Of...** option is the default, and causes the current song key to be used. The current song key is selected using the Song Key command, and is displayed on the status bar in the **Piano Roll**.

If the song's proper key isn't known, the other options are useful. They determine whether notes are displayed as sharps (F# would be used instead of Gb), or flats (Gb would be used instead of F#). This affects where the notes are displayed on the **Piano Roll**, and also the notation used when displaying note names.

## **Piano Roll Options Note Colour**

The **Note Colour** dialog allows you to set the note colours to use when displaying notes on the **Piano Roll**. There are four colours, each containing a red, green and blue part.

The first two colours are used for normal notes (notes that are in the song's key). The first of these is used for a soft note (velocity of one), and the second is used for a loud note (velocity of 127). The colour used for a note between these two velocities is a blending of the two colours, depending on how close the velocity is to the minimum/maximums.

The second pair of colours is used for notes that are accidentals (not in the current song's key). There are two colours used here as well.

Each colour is made up of a combination of the three primary colours. If the Red, Green and Blue settings are all equal to 0, the result is black. If they are all set to 255, the result is white.



## **Piano Roll Options Relative**

The **Options Relative** switch is used to determine what happens to events in a track when the start time of an event is changed. If relative is on (checked), any changes in the start time of an event will also cause the start times of all following events to be changed. Thus, everything in the track from the selected event onward is moved in time as well.

This is an extremely powerful option, but it is also quite dangerous. Please ensure you understand it before trying it out on your masterpiece.

On the **Piano Roll**, this switch is only used if a single event is moved in time. If more than one event is selected, and the group is dragged, only the selected notes will be affected.

## **Piano Roll Options Velocity Switch**

This switch determines whether the velocity of each note is shown in the Piano Roll window. If the switch is on, each note will cause a vertical line to be displayed showing a graphic representation of the note's velocity. The longer the line, the higher the velocity. For reference purposes, a horizontal line is drawn representing the height of a velocity of 64.

## **Piano Roll Options Dashed Lines Switch**

This switch determines whether or not dashed lines are drawn in the **Piano Roll** Screen.

If on, dashed lines are drawn wherever a line would normally go. For example, if the **Alto Clef** is not displayed and dashed lines are on, Middle C would have a dashed line drawn through it.

Dashed lines are intended to help locate a note that is off the normal staff lines.

## **Piano Roll Options Clef Switches**

WinJammer will display three different types of clefs in the **Piano Roll** screen.

Most piano music uses a "grand" clef, which includes a treble and bass clef. Guitar music, "fakebooks" etc often only contain a treble clef. Some orchestral instruments such as a Viola use the Alto clef, which has Middle C as its middle line.

You can select which clefs you would like to see in the **Piano Roll** screen. If an Alto clef is chosen, neither a Treble or Bass clef can be shown as they would overlap.

## **Piano Roll Options Sound Event**

This switch is used to determine whether WinJammer should play each note as it is selected.

If this switch is on, as each event is selected, the event is sounded. If the event is a note event, the length of the note will be about half a second. If you move rapidly between notes, the last note will be cut off to avoid slowing your movement down.

This switch also appears on the Options menu.

## **Procedures**

This index contains a list of the Help available on the various WinJammer Procedures. For information on how to use Help, press **F1** or choose Using Help from the Help menu.

### **Track**

[Copying Portions of the Song](#)

[Deleting Portions of the Song](#)

[Advanced Techniques for Track Transform](#)

### **Recording & Playing**

[Recording](#)

[How to play the song](#)

### **System Exclusive**

[Hints and Tips on using System Exclusive with WinJammer](#)

### **Working with WinJammer**

[Switching Between Windows inside WinJammer](#)

[Using the Toolbar](#)

[How to Saving a MIDI Format Type 0 Files](#)

[How to use the reset functions in WinJammer](#)

[Returning to Windows](#)

## Copying Portions of the Song

WinJammer allows you to copy tracks in the song.

### Copying a Track

The Track List window can be used to copy one track. The following steps are required.

1. Select the track you would like to copy by selecting it in the **Track List** window.
2. Perform an Edit Copy command (key: **Ctrl+C**) to copy the track into the clipboard.
3. Select the location to insert the new copy of the track. This is done by selecting the track that the new copy of the track should be inserted before.
4. Perform an Edit Paste command (key: **Ctrl+V**) to insert the track into the song.

If another copy is desired, repeat steps 3 and 4.

This form of clipboard operation is compatible with many other Windows MIDI products.

## **Deleting Portions of the Song**

WinJammer allows you to delete tracks.

### **Deleting a Track**

The Track List window can be used to delete a track. The following steps are required.

1. Select the track you would like to delete by selecting it in the **Track List** window.
2. Perform an Edit Delete command to delete the track. The Edit Clear command will delete all events from the track, without actually deleting the track.

If a mistake is made, the Edit Undo command can be used to recover the deleted track.



## Recording

### Basic Recording

Most recording is simple. Just follow the following steps.

1. If you'd like to hear a metronome while you are recording, use the [MIDI Metronome](#) command to set one up. A count in period can also be set up using the [MIDI Metronome](#) command, to give you time to get started.
2. Select the time to start recording using the **Play Position** control on the **Toolbar**.



3. Press the **Record** button to start recording.
4. Play what you'd like to record using your MIDI keyboard.



5. Press the **Stop** button when recording is finished.
6. A dialog will appear.

The top area shows you information about what was recorded. This is simply for your information.

The **Trim all Events Before** and **Trim all Events After** fields are used to trim the recorded events before placing them into a track. These default to the **From/To** times from the **Toolbar**.

The **Destination Track** is used to specify the track to place the recorded events. The last entry in this list is **<new track>** which specifies the last track in the song.

The option **Merge into Track** can be used to merge the recorded events into an existing track without removing anything from the destination track. If this is not selected, the recorded data will replace any events in the destination track, between the two times entered. For a new track, this switch has no function.

The **Retry** button is used to throw away the recorded information, and enter record mode again.

### Controlling Tempo and Time Signature

The tempo and time signature used when recording is taken from track zero of the song. Winjammer always creates a track zero for you. The time signature used is always 4/4, and the tempo will match that shown on the toolbar.

If another time signature is desired, or if the time signature or tempo changes during the song, you must edit the track zero to place these events into it. Use the [Event List](#) to insert a [Tempo Change](#) or a [Time Signature](#) event into track zero. Note that changes made to the tempo on the **Toolbar** will be automatically made to track zero as well.

### Recording Options

Some other functions can have an effect on recording. The [MIDI Record Filter](#) command is used to determine which MIDI events are to be recorded, and which are to be ignored. This is an active filter - if an event is ignored because of a setting here, there is no way to get that event back.

Winjammer always records all channels when recording. They will all be placed into a single destination track. If this is not desired, place the recorded information into a new track, then use the [Track Split](#) and [Track Merge](#) commands to place the recorded events into the correct track.

### MIDI Sync Mode Recording

Winjammer also has a MIDI Sync mode. This is used when recording from an external MIDI

sequencer. In this mode, WinJammer becomes slaved to the external MIDI sequencer. WinJammer's tempo events have no effect.

MIDI Sync mode is selected by using the MIDI Advanced dialog. In this dialog, select **MIDI** as the **Clock Source**. The option **Wait for MIDI Start** should automatically be selected as well. Now, WinJammer will ignore any tempo settings it has, and listen to the MIDI clock signals sent by the external MIDI sequencer to determine the tempo. It will wait until a MIDI Start or MIDI Continue command is seen before starting recording. The **Elapsed Time** display on the **Toolbar** will show "Waiting" instead of a time, until the MIDI Start signal is seen.

After the appropriate mode is set using the MIDI Advanced dialog, simply press Record to start the recording. When the external MIDI sequencer sends a MIDI Stop event at the end of the song, WinJammer will stop recording. The **Record** dialog shown above will then appear.

Once you are finished with MIDI Sync mode, or to hear what was recorded, you must use the MIDI Advanced dialog to switch back to an internal clock.

WinJammer will also act as an external MIDI sequencer, sending the needed MIDI signals. The Playing topic describes these options.

## Using the Toolbar

If you have a mouse, the **Toolbar** is a handy short cut to using the menus, just as short cut keys provide abbreviation for keyboard users. In order to use the **Toolbar** you must either use a mouse or press the **F9** key. The **F9** key causes the cursor to move up to one of the controls on the **Toolbar**. The normal **Tab** keys can be used to move between the various controls on the toolbar. Press **F9** again, or **Enter** to move the cursor back off of the **Toolbar**.

The various controls on the **Toolbar** are described below.

### Record & Play



This icon is used to start recording on the current track. See the [Recording](#) topic for more information.



This icon starts playing the song. See the [Playing](#) topic for more information.



This icon replaces the play icon while playing or recording, and is, of course, used to stop the current song.

### Rewind & Fast Forward



This icon rewinds the current song position back to the last position that playing started from or back to the start of the song. If pressed while playing or recording, this will stop play before rewinding.



This icon fast forwards the current song position to the last place that playing started or the end of the song. During playback, the button can be used to double or quadruple the current tempo. Each time it is pressed, it will cycle through double tempo, quadruple tempo and normal tempo.

### File Open & File Save As



This icon is used to invoke the [File Open](#) command, to load a new song.



This icon runs the [File Save As](#) command. This will save the current song.

### Play Position

This control displays the current position in the song. When playing, it is updated as the song plays. When stopped, it is used to scroll the various windows, and specify a starting position for playback or recording.

### Elapsed Time

This displays the time elapsed since playback or record was started.

If MIDI sync mode is selected, this may show "Waiting" instead of a time. This indicates

that playback/recording has not started yet. See the [MIDI Advanced](#) command for more information.

### **Track Selector**

The **Track Selector** is used to indicate which track is currently selected, and to provide a way to change the current track in the [Event List](#) and [Piano Roll](#) windows. You can change the track selected by using the spin buttons.

### **Tempo**

The current tempo is displayed here as the number of beats per minute. When playing, all tempo changes are reflected here. The tempo can be changed at any time by using the spin buttons, or by typing in a new value. Changes made while the song is playing or recording will cause the appropriate [Tempo Change](#) event in track zero to be updated.

### **Help**



This icon is used to start up the help system that you are using to view this file. It is equivalent to the Help Index menu item. You can also press **F1** at any time to bring up the help file. If you do this inside a dialog, the appropriate portion of the help file will be displayed for you.

## **Saving Type 0 Files**

In order for a song to be saved as a type 0 file, there must be only one track in the song.

Use the following steps to create a type 0 file.

1. Merge all of the tracks in the song into a single track in track number zero. This is easily done using the Track Merge command. Select the option labeled **Delete Source Tracks**. This will cause the source tracks to be deleted once the merge is complete.
2. Save the song using the File Save or File Save As command.

## **Exiting**

To exit WinJammer and return to Windows, choose either **Close** from the main window's system menu or **Exit** from the File menu. You can also close WinJammer by pressing the **Alt+F4** key combination.

If you have not saved your last set of changes, WinJammer will ask you if you want to save them before exiting.

## Advanced uses for Track Transform

The **Track Transform** command is used to transform all events in one track according to the formula:

$$\text{new} = ( \text{old} + \text{add} ) * \text{mult} / \text{div}$$

In other words, the original data has an amount added, or subtracted, to it. The result is multiplied by a number, and this result is divided by another amount. The resulting value is range checked to ensure it is valid, and this result becomes the new value.

This command can do some very powerful things to your data, such as: adjusting the velocity of a track, evenly adjusting the tempo of a song, quantizing events etc.

Consider the following problem. You have a track which has velocities between 0 and 127 which you want to adjust into the range 0 to 100. You could adjust these by adding -27 (multiply by 1, divide by 1), which would probably make some notes too soft. A better way would be to add zero, multiply by 100 and divide by 127. This will evenly re-map the velocities.

A similar process can be used to adjust a track containing modulation wheel messages (controller number 1). Lets say there is too much modulation used - we'd like to reduce the levels. Select Control Change as the type to transform, Controller number 1 (modulation), then add zero, multiply by 110, divide by 127. This will evenly reduce the range of modulation events.

## Using System Exclusive with WinJammer

The System Exclusive facility within WinJammer is very comprehensive. WinJammer allows you to Import MIDIEX formatted, system exclusive files into any song. As well you can use the MIDI System Exclusive command to send and receive system exclusive data from your MIDI device. The MIDI System Exclusive Customize command allows you to create and edit custom request strings.

System Exclusive events should be used with caution inside songs. It is very handy to include these in songs, but the nature of system exclusive messages causes some problems as well. Long system exclusive messages take time to transmit. Other messages such as note events cannot be sent while a system exclusive message is being sent. If the system exclusive messages are placed too closely together in the file, the rest of the song will slow down until this bottle neck is cleared.

Generally, system exclusive messages are added to the beginning of a song, to "setup" the device before playback starts. If this is done, make sure there is space between the system exclusives and the actual start of the song. If needed, start the song playing at measure 3 instead of one - this will give enough time for most Sound Canvas setups - other equipment may require more time.

When playback is started in the middle of a song, the song is "chased" to the start point. This is sort of like playing all non-note events that occur on all tracks before the starting point. This causes the song to be properly setup, so that it will sound correct. This is controlled by the **Chase Controllers** switch in the MIDI Advanced command.

When the song is chased, this is done one track at a time. It is best to place system exclusive messages on track one, so that they are processed before other tracks. Otherwise, the system exclusive messages may over-ride the settings in the other tracks.



## **Switching Windows**

With the multiple windows approach used by WinJammer, a method of rapidly switching between active windows is needed.

### **Using a Mouse**

To switch to another window using the mouse, simply click somewhere on the window you wish to switch to. If the window is not active, you can select it from the Window menu of the main window.

You can also switch windows by clicking on their icon. These icons will display the window.

### **Using the Keyboard**

**Ctrl+F6** will cycle through each windows. The **Ctrl+F6** key switches to the next window if it is active, or will display its icon if it is not active.

The window menu may also be used to switch control. These commands open the window if it is closed, or switch to the window if it is not the active window.

## Playing

Besides normal playing, Winjammer also supports

### Basic Playing

Normal playing is simple. Just follow these steps:

1. If a metronome is desired, use the [MIDI Metronome](#) command to set one up. This is also where an initial count in period is set up. Normally, this step is not required.
2. Select the time to start playback using the **Play Position** control on the **Toolbar**.



3. Press the **Play** button to start playing. If all is well, the **Play Position** will start changing, and the **Elapsed Time** display on the **Toolbar** will show the elapsed time. If the **Elapsed Time** display does not change, press **Stop** then run the [MIDI Advanced](#) command, and choose the **Reset to Defaults** button, then try again.



4. Press the **Stop** button to stop play, or wait until the end of the song.

### Controlling the Song while Playing

While the song is playing, the Tempo control on the Toolbar is updated with the current tempo whenever a new tempo event is seen in track zero. A new tempo can also be entered into the tempo control on the Toolbar, or the spin button can be used to adjust the tempo. These changes are permanent, and will cause the current tempo event in track zero to be changed.



While playing, the Fast Forward button can be used to change the tempo as well. Pressing it once will cause the tempo to be doubled. Another press will cause the tempo to be quadrupled (four times normal). A third press will return the tempo to normal. These are temporary changes to the tempo, and do not change the tempo in track zero.

### MIDI Sync Playing

MIDI Sync mode is used to synchronize two MIDI sequencers. It is often used to record from one sequencer to another. Winjammer will play along in MIDI Sync mode, but this is uncommon. Normally, what is desired is to record from Winjammer into another external sequencer. In this mode, Winjammer acts as the "master" unit.

To play with Winjammer acting as the master, follow these steps.

1. Use the [MIDI Advanced](#) command to set up for playback. Choose an **Internal** clock (not MIDI clock!), and enable the **Send MIDI Clocks**, **Send MIDI Start/Stop**, and **Send Song Position Pointer** switches. The other switches should all be left off, except for **Chase Controllers**.
2. Select the time to start playback using the **Play Position** control on the **Toolbar**.



3. Press the **Play** button to start playing. If all is well, the **Play Position** will start changing, and the **Elapsed Time** display on the **Toolbar** will show the elapsed time.



4. Press the **Stop** button to stop play, or wait until the end of the song.

Once you have finished, you should run the MIDI Advanced command again, and turn the switches off again.

## **System Exclusive Request Strings**

System Exclusive request strings are used by the MIDI System Exclusive command, and can be edited using the MIDI Sys Ex Customize command. The purpose of these strings is to ask the MIDI device to transmit the current settings as a series of system exclusive messages. Many devices support this, but not all. The manual for your MIDI device should contain this information.

A number of request strings are provided with WinJammer.

### **Roland MT-32**

There are three request strings here - each dumps a portion of the memory of the device. All three are required to obtain a complete dump. These strings should work with all devices in this family, including the MT-32, LAPC-1, CM-32L and CM-64. In the case of the Roland CM-64, there are additional settings for the PCM portion, however the CM-64 will not transmit these.

### **Roland Sound Canvas**

The request strings labelled "SC" are for the Roland Sound Canvas series. These will work with the SC-155 and SC-55. They will **not** work with the SCC-1 card - it never transmits anything.

There are actually 17 request strings required for a full memory dump of the Sound Canvas. Included here are the dumps for the melodic parts, plus the dumps for the first drum part. Most of the dumps are for drum parts, and need to be edited to obtain dumps for the second drum part.

### **FM MIDI Synth**

These request strings are for the FM MIDI driver, written by Jamie O'Connell. This driver will work with most sound cards containing a FM chip, including the Sound Blaster series, Pro Audio Spectrum and Microsoft Sound System.

These request strings dump various portions of the patch memory, and are fully documented in the help file which comes with the driver. Once the driver has been installed, a new icon will appear in the Windows Control Panel. Use this to configure the driver, and access the help file.

## Resetting MIDI Devices

Whenever playback or recording is stopped, WinJammer sends note off events for all notes currently playing. This is often all that is required, however if the song contains sustain pedal events (Control Change events for controller number 64) it is possible that the notes will continue to sound. WinJammer has the ability to send a reset string to solve this problem.

There are two forms of reset supported by WinJammer - one is automatic, and is controlled by the MIDI Auto Reset switch. This causes the reset sequence to be sent whenever playback or recording ends. The other form of reset is the MIDI Reset command (key: **Ctrl+R**). This acts like a panic button, and sends another reset sequence whenever desired.

## **Event List Window**

This window is used to edit the contents of the current track. The track events are displayed in a list format, so all events in the track can be edited and viewed in this window.

For more information, see the [Event List](#) topic.

## **Piano Roll Window**

This window is used to display and edit the contents of the current track. The track's note events are displayed in a graphical format, similar to both standard musical notation and "Piano Roll" notation.

Try clicking on the **Right Mouse Button** to access the [Piano Roll Popup Menu](#).

For more information, see the [Piano Roll](#) topic.

## **Audition Patches Window**

The **Audition Patches** window is used to view or change patches. This can be done anytime, including while a song is playing.

For more information, see the [Audition Patches](#) topic.



## **Track List Window**

The **Track List** window displays the current song in track format, displaying items of interest such as the track name, instrument name and patch.

For more information, see the [Track List](#) topic.

## Welcome to *WinJammer*

WinJammer is a Windows program which is used to manipulate MIDI data. WinJammer allows you to record and play back songs, send and receive MIDI data and edit MIDI files. All files are stored using the standard MIDI file format. This allows WinJammer to share MIDI files with other MIDI software packages.

WinJammer is not a free program, but is being distributed under the **Shareware** concept. This allows you to examine the program, and to determine whether it is of worth to you. If you find the program useful, and are going to keep using it after the evaluation period, you are under both a legal and moral obligation to register it. The evaluation period for WinJammer is 30 days. Please review the help topic [Registration](#) for more information.

This index contains a list of all available Help topics for WinJammer. For information on how to use Help, press **F1** or choose Using Help from the Help menu.

<a href="#">Quick Start</a>	Quick start help for first time users
<a href="#">WinJammer Tour</a>	Exploring WinJammer
<a href="#">Commands</a>	Information on a particular command
<a href="#">Procedures</a>	Answers to "How do I..." questions
<a href="#">Keys</a>	List of various keys used in WinJammer
<a href="#">Windows and MIDI</a>	Information about Windows and MIDI
<a href="#">Glossary</a>	Glossary of MIDI terms
<a href="#">Problems</a>	Answers to common problems and questions
<a href="#">Registration</a>	How to register and get support for WinJammer
<a href="#">WinJammer Professional</a>	Information on <b>WinJammer Professional</b>

## WinJammer Professional

WinJammer has a new big brother - **WinJammer Professional**. It's full of new editing features like Humanize, Swing, and Controller Fill to name a few. It's got a beautiful 200 page manual complete with easy to understand tutorials. And, it supports Wave Files, SMPTE, and MCI Events.

### See for Yourself!

If you'd like to see for yourself, there's a demo version of WinJammer Professional available for downloading on [CompuServe](#). Simply GO WINJAMMER and look for the file WJPRO.ZIP in Library 16. A demo version is also available by contacting The Parker Adams Group in Los Angeles at 310-450-2175 (see the [Registration](#) topic for the address).

### So, Exactly What Are These New Features?

WinJammer Professional is big and powerful. Check out the following list of features and we think you'll agree that WinJammer Professional is a world class sequencer program. Here's a detailed list of the differences between WinJammer 2.30 and WinJammer Professional.

### User Manual and Reference

WinJammer Professional comes with a 200 page User's Guide and Reference Manual. The User's Guide contains easy to understand tutorials that'll show you how to get the most out of WinJammer. The tutorials will show you how to take a simple tune and create a fully orchestrated song from it. The Reference manual contains a complete reference to all aspects of the program, with pictures of the actual screens and examples.

### Piano Roll

WinJammer Professional's Piano Roll window allows you to select one **or more** events for editing. You can drag groups of notes around easily using the mouse. You can "circle" a group of notes with the mouse to select them. Just like WinJammer, you can also draw (create) new notes on the screen.

### Event List

This window now allows for groups of events to be selected and edited. It now shows the names of each program change event, and the name of each controller. It also supports the new MCI and Wave events.

### Track List

This window looks much the same as WinJammer. It shows the names of each patch, and lets you easily change any of the fields by simply typing the new value into the field. An important difference is that the Track List window lets you select a group of tracks instead of just a single track. This makes it easy to make a change to a number of tracks at once!

### Toolbar

The toolbar looks much like WinJammer's, with some important additions. The toolbar allows you to set up a From/To region of the song. This region is used for punch in recording and for limiting the effects of changes to just a region of the song. You can also easily change the current position of the song using these From/To times.

### Audition Patches

This window looks the same as in WinJammer. An important distinction between the two programs is that WinJammer Professional allows you to create your own patch name set, and includes support for banked devices such as the Roland Sound Canvas (GS). This lets you easily select all 300+ sounds available from your Sound Canvas!

### Song View

This is a new window which shows you an overview of the song tracks at a glance. It lets you easily see where there is data in a track at any point in the song. It also lets you cut/copy/paste measures on one or more tracks.

### **Step Record**

This is another new window. It lets you step record - enter a song one note at a time. You can use either your external MIDI keyboard, or the built in Keyboard window. It's easy to use and very versatile.

### **Keyboard**

This window is both fun and practical. It shows a MIDI keyboard on the screen which you can play notes with the mouse. It'll transmit on any channel or port, with any velocity you choose. You can even resize it, or change the number of keys that are triggered (ever wanted a 128 key MIDI keyboard?). It's the perfect companion for the Step Record window - you can use it to "play in" step recorded notes.

### **Swing Command**

This is a new command that adds "swing" to your tracks. Besides being a useful command, it's also fun to experiment with different amounts of swing.

### **Humanize Command**

This command lets you make a step entered or hard quantized song sound better. It'll adjust the event start time, note length or note velocity. It's surprising the difference it makes!

### **Controller Fill**

If you've ever wanted to gradually change the volume or the tempo over several measures, then you'll enjoy using this feature. All you do is enter the start and end times and values, and away it goes. Use it on volume, velocity, tempo, pitch bend or any controller!

### **Quantize**

Upgrade to WinJammer Professional and you can use the improved "quantize by percentage" feature to make your tracks sound tighter without losing the "feel" of your music.

### **Powerful Editing**

You can now select in three different ways: Entire Tracks, All Events Between Two Points, or Just The Events You Select. Virtually all the new powerful editing commands let you change just the events you've selected. Commands like Quantize, Humanize, Swing, Transpose, Transform, etc., let you choose which section of the track(s) to work on. The result is unparalleled power!

### **Wave & MCI Events**

WinJammer Professional plays Wave Files! And, you can control any MCI device from inside the song. These features allow you to incorporate vocal recordings or sound effects (Wave Files) and the various MCI triggered events into your songs! The version of the WinJammer Player program which comes with WinJammer Professional also supports Wave and MCI events!

### **SMPTE Support**

WinJammer Professional supports SMPTE sync. It'll work with cards such as the Music Quest MQX-32M to operate in a SMPTE environment so you can hook up to tape recorders, etc.

WinJammer Professional carries a list price of **\$199.95 US**. Registered WinJammer users can upgrade for the special price of **\$129.95 US**. For full details and current pricing, please contact the Parker Adams Group at:

The Parker Adams Group  
Suite 124  
12335 Santa Monica Blvd.  
Los Angeles, CA 90025 USA  
Phone: (310) 450-2175  
Fax: (310) 450-8526

## Registration

As discussed in the index, WinJammer is being distributed as **Shareware**. This allows you to evaluate the program to see if it performs properly, before you are obligated to pay for it. It does not allow you to "evaluate" the program forever - if you use it for more than 30 days, then you **must** register.

To register WinJammer send us a note and a cheque or money order for **\$50 US**. Please include in your note your name, mailing address, current version number and computer/MIDI setup. The current version information is found in the Help About dialog box. If you would like a copy mailed to you, **please add an additional \$5**, and we will send you the most recent version available. Please note that registration for WinJammer includes registration for WinJammer Player.

When we receive your cheque, we will send you a letter containing your personal registration code, and a diskette if you paid for one. Use the File Register command to unlock the program. If you have a CompuServe or Internet account, and include your id, and we will send the registration code via electronic mail. Otherwise, we will have to send you an old fashioned letter.

We can be reached at:

WinJammer Software Limited  
69 Rancliffe Road  
Oakville, Ontario  
Canada  
L6H 1B1

Phone: (905) 842-3708  
Fax: (905) 842-2732  
CompuServe: 72662,3021  
Internet: 72662.3021@CompuServe.com

Please ensure that you use the correct postage. It currently costs 40 cents to mail a letter from the US to Canada. A number of people have had their letters returned because of insufficient postage.

## Registration on CompuServe

If you have a CompuServe account, you can also register online. Type **GO SWREG** at any CompuServe prompt and select product number **119**. The registration fee will automatically be added to your CompuServe bill. If you don't have a CompuServe account, we urge you to get one. Please see the [CompuServe](#) topic for more information and an exciting **free** offer!

You will receive mail on CompuServe, containing your registration information. The most recent version of WinJammer can always be found in the WinJammer section of the MIDI Vendor Forum on CompuServe, in library 16. Just GO WINJAMMER to get there!

## Parker Adams Group

Our friends at the Parker Adams Group will be pleased to accept registrations for WinJammer. They accept Visa, Mastercard and Discover Card, as well as cheques. The Parker Adams Group is also a distributor for [WinJammer Professional](#), and will be happy to upgrade you from WinJammer to WinJammer Professional, or accept an order for WinJammer Professional.

The Parker Adams Group can be reached at:

The Parker Adams Group  
Suite 124

12335 Santa Monica Blvd.  
Los Angeles, CA 90025 USA

Call the Parker Adams Group between 9:00am and 5:00pm Pacific Time at (310) 450-2175, or Fax anytime at (310) 450-8526. Remember to include a return phone number if you send a FAX, just in case there are any questions.

### **P. & A. Shareware Distribution**

If you are in Japan, you can register through P. & A. Shareware Distribution. Registration through P. & A. costs 7,500 Yen, including tax, basic setup information in Japanese and shipment of the latest version available on diskette. They will accept orders by telephone, mail or FAX. They also accept Visa, Mastercard, American Express and DC credit cards. Contact them at:

P. & A.  
302 Bellwins, 1367-23  
Nakagami, Akishima  
Tokyo, 196 Japan  
Tel: 0425-46-9141  
Fax: 0425-46-9142  
NiftyServe: PAF02461

### **Support**

There are a number of channels that you can use to contact us. The best method is via CompuServe - simply GO WINJAMMER to find us. If you don't have a CompuServe account, we can fix that - see the [CompuServe](#) topic for a **free** introductory offer!

The CompuServe ID for WinJammer Software is 72662,3021. Internet users can send mail to [72662.3021@compuserve.com](mailto:72662.3021@compuserve.com).

We can also be reached by telephone at (905) 842-3708 between the hours of 1 and 5 PM, Eastern Time. You can also FAX (905) 842-2732 anytime.

## CompuServe®

### CompuServe gives you a direct line to WinJammer Software Ltd.

The WinJammer section in the MIDI B Vendor Forum is the best spot to get answers to any question you may have about any WinJammer Software product. You can get:

- \* **Assistance** on any technical problems you may have
- \* **News** on new products and upgrades
- \* **Demonstration** versions of software

You can talk directly to us at WinJammer Software. You can also talk with the thousands of other users of WinJammer Software products among CompuServe's over 1.6 million international membership. The WinJammer section is your gateway into all of the other services available on CompuServe.

The WinJammer Forum lets you:

- \* **Get Technical:** tell us about any technical problems you're having. We'll do our best to get you fixed up quickly, and make sure you're happy.
- \* **Make Suggestions:** tell us what you'd *really* like to see in the next release. What features are great? What's bad? We want to know!
- \* **Check the Library:** the latest version of WinJammer is always found in the WinJammer library on CompuServe. Always. The library also has press releases, demonstration versions of WinJammer Professional or other software.

### CompuServe is much more...

The WinJammer section of the MIDI B Vendor Forum is your window to the body of additional services available on CompuServe. Many services complement specific applications. Others add a new dimension to business endeavors. Still others cater to personal interests, from aviation to Zinfandel wines.

- \* **Invest Wisely.** Speed stock purchases and sales with convenient electronic brokerage services. View stock trends online, research investment possibilities, or transfer data from CompuServe for use in your favorite spreadsheet package.
- \* **Take a trip.** Compare airline schedules and fares on CompuServe. Find the least expensive flight or the best time to fly. Book your tickets online, or pass information on to your travel agent.
- \* **Do your homework.** Turn hours of research into minutes online, with hundreds of national and international databases representing diverse specializations. Avoid lengthy library searches by pulling up abstracts and full articles directly online.
- \* **Be informed.** Turn to CompuServe's online news services daily for news from the Associated Press' national and international wires, United Press International's national, international and regional wires, The Washington Post, Reuters and other reputable sources. The Executive News Service scans these wires for articles on topics you select, then clips and saves them for reading at your leisure.

### Don't pass this up.

As a WinJammer customer, you are entitled to a free Introductory Membership to CompuServe, including:

- \* FREE access to all of CompuServe's Basic Services for one month,
- \* a \$15 introductory usage credit to explore the WinJammer section of the MIDI B Vendor Forum and CompuServe's other Extended and Premium Service offerings,
- \* a private User ID Number and Password
- \* a complimentary subscription to *CompuServe Magazine*, CompuServe's monthly computing publication.



Start connecting with WinJammer and other CompuServe members by calling one of the following numbers.

Australia	Freephone: 008 025 240	Direct: (+61) 2-410-4260
France	AZUR phone: 36-63-81-22	Direct: (+33) 1-47-14-21-65
Germany	Freephone: 0130 37 32	Direct: (+49) (89) 66 535-111
New Zealand	Freephone: 0800 446 113	Direct: (+61) 2-410-4260
UK	Freephone: 0800 289 378	Direct: (+44) (272) 760681
U.S.	Toll Free: 800-524-3388	Direct: (+1) 614 529-1349
Elsewhere		Direct: (+1) 614 529-1349

**Be sure to ask for Representative #232**

If you are already a CompuServe member, enter GO WINJAMMER at any ! prompt to access the WinJammer section of the MIDI B Vendor Forum on CompuServe.

We look forward to seeing you online!

