AdLib®

Visual Composer/ MIDI Supplement

User Guide

AdLib®

Visual Composer/
MIDI Supplement

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Introduction

This manual presents and explains Visual Composer/MIDI Supplement, a program with which you can combine the performance of the Ad Lib Personal Computer Music System with the convenience and power of the MIDI standard. This software supplement adds powerful MIDI sequencing capabilites to the regular Visual Composer features.

The first section, entitled "Getting Started", explains what to do with the program diskette before you start using the supplement.

Next, "Using the Visual Composer/MIDI Supplement", shows you how to use the new MIDI options. You will learn how to record and play back music with MIDI instruments, and how to set the MIDI parameters. This section also contains instructions on music editing with the MIDI option, which includes a brief recap of the standard Visual Composer editing capabilities.

"Quick Reference", the third section, offers a summarized description of the commands available in the MIDI option.

In the appendices A, B and C, you will find a list of the default settings for the MIDI parameters, a glossary of MIDI terms, and information on using a mouse.

The appendix D contains the MIDI implementation chart for the Visual Composer/MIDI Supplement. It details the MIDI capabilities of the program: what information can be communicated with other MIDI devices and how it is communicated.

This being a supplement to existing software, we assume that you are familiar with the basic commands and features of the standard Visual Composer. We also assume that you are familiar with the MIDI instruments you use. If you are unfamiliar with the different operations of these devices, please refer to your Visual Composer User Guide and your MIDI instrument manuals.

Getting Started

Required Equipment and Software

To use the Visual Composer/MIDI Supplement, you need the following:

1. The Ad Lib Music Synthesizer Card and the Visual Composer program.

2. A computer:
    IBM-PC, PC XT, PC AT or a compatible equipped with at least a 360K disk drive and 384K of memory (additional memory enables longer or more complex pieces).

3. A graphic display card:
    "IBM Color Graphics Adapter" (CGA), "IBM Enhanced Graphics Adapter" (EGA), or "Monochrome Graphics Adapter" (MGA).

4. An operating system:
    PC/MS-DOS 2.00 or all latest versions.

5. An MPU-401 or compatible MIDI interface card.

6. Headphones, external loudspeaker or stereo system.

NOTE: You can use the Visual Composer/MIDI Supplement with a mouse. Consult the appendix C for details.

Contents of the Diskette

The diskette contains various files related to the Visual Composer/MIDI Supplement program:

- VCINSTA2.BAT
  This file contains the command sequence necessary to integrate your earlier Visual Composer diskette to your Visual Composer/MIDI Supplement.

- INSTALL.EXE
  This program is called by VCINSTA2.BAT during the integration sequence.

- COMPOSER.BAT
  This file contains the command sequence which loads Visual Composer/MIDI from the DOS.

- COMPOS2.EXE
  This file contains the main part of Visual Composer/MIDI. Do not directly load this file. Instead, use the file COMPOSER.BAT which contains the normal loading sequence.

- COMPOS2.RSR
  This file contains the resources required by Visual Composer/MIDI.

- MPU401B.COM
  This file contains the driver for the Roland MPU-401 MIDI interface and the Ad Lib Synthesizer Card.

- SOUND.COM
  This file contains the sound driver for the Ad Lib
  Synthesizer Card. (It is used when the above
  MPU401B.COM is not available.)

- README.TXT
  This file contains information on the latest program
  updates, if there are any.

The files MPU401B.COM, COMPOSER.BAT, COMPOS2.EXE
and COMPOS2.RSR must always be in the current directory.

Before continuing, we suggest that you take a look at the
README.TXT file. To read this file, proceed as follows:

1.　Insert the diskette into drive A.

2.　Type the following:
   A>TYPE README.TXT

NOTE: In this manual, all expressions that are to be typed on the
　　　DOS should be typed as shown in the following example:
　　　A>TEST

　　　The standard type (A>) indicates the computer's prompt,
　　　while the bold type (**TEST**) indicates what you have to enter.

Installing Visual Composer/MIDI Supplement

Before using the Visual Composer/MIDI Supplement, it is necessary to make one complete program diskette from your earlier Visual Composer diskette and your Visual Composer/MIDI Supplement.

NOTE: Prior to doing this, we strongly suggest that you make a backup copy of both of these diskettes and that you store the original ones in a safe place.

The two program diskettes are integrated as follows:

1. Insert the Visual Composer/MIDI Supplement diskette into drive A and change your working directory to be the device A.

2. Type the following command at the DOS prompt:

    A>VCINSTA2

    If you have a two disk drive system, you will be required to insert the earlier Visual Composer diskette into the drive B.

    If you have a one disk drive system, you will be asked to swap diskettes.

3. Make a backup copy of the integrated version of the Visual Composer with the MIDI supplement.

    If you have a hard disk, you may copy the contents of the newly generated diskette into a directory.

Loading the Program

To execute the program from diskette, insert the new, integrated diskette into drive A, set the current drive to A, and type:

A>COMPOSER

If you are using a hard disk, go to the appropriate directory and type:

C>COMPOSER

Using Visual Composer
with the MIDI Supplement

This section, which is subdivided into three parts, explains how to use the Visual Composer/MIDI Supplement. In "MIDI Option Overview", the first part, the MIDI options are explained in general terms using pre-defined settings. Afterwards, the details of each option are explained in "Adjusting the MIDI Set-Up". Editing MIDI recorded music is discussed in the last part, "Editing Music".

MIDI Option Overview

Visual Composer/MIDI offers extensive sequencing and editing capabilities.

- Record or play up to eleven voices at the same time.

- Record and play back the following note attributes: pitch, note on/note off, velocity, pitch bend, and instrument.

- A handy conversion table allows you to associate Ad Lib instrument sounds to your MIDI instrument's pre-sets.

- You can split your keyboard into as many as eleven sections, each of which may be assigned to one or more MIDI channels and Visual Composer voices.

- Visual Composer/MIDI supports multiple pitch transposition values within each keyboard section.

- Extensive options for looping (repeating) patterns.

- Input and output quantizing of up to 96 divisions per beat.

- A flexible control panel lets you select the voices to be recorded and monitored.

- You may combine the use of an external synthesizer with the Ad Lib Music Synthetizer Card for monitoring and playback.

As you will see in this chapter, all the specific features of the Visual Composer/MIDI Supplement are accessible through four commands located in the Options menu.

Recording Music from MIDI Instruments

Setting the MIDI Hardware

Before you can use the Visual Composer/MIDI Supplement, you must first connect your computer to a MIDI instrument. To do this, your computer must be equipped with a Roland DG MIDI Processing Unit MPU-401 (or any compatible), in addition to the Ad Lib Music Synthesizer Card. Please refer to the instructions included with your equipment for the installation procedures.

NOTE: The loading procedure shown earlier involves the use of the **MPU401B** driver provided on the diskette.

When Visual Composer/MIDI detects the presence of the MIDI interface, the MIDI commands become accessible in the Options menu. You may then use these commands to record notes by playing your MIDI instrument. The program will treat the notes in the same manner as if you had entered the notes manually in Visual Composer write mode.

Recording with Visual Composer/MIDI is very powerful and flexible. Although all of the parameters can be set with the commands MIDI Record Set-Up and MIDI Presets of the Options menu, the default settings will be sufficient to undertake your first recordings. The only adjustments you may have to make are the tempo and the voice(s) to be recorded.

Setting the Tempo

To set the basic tempo of your music, choose the command Basic Tempo of the Playback menu. A dialog box will appear displaying the default tempo of 120 beats per minute. You may then alter this tempo by entering a new value for the desired beats per minute.

Setting the Voice(s) to be Recorded

To set the voice(s) to be recorded, choose the command MIDI Record Set-Up of the Options menu. An extensive control panel appears displaying numerous sections. The main grid situated at the upper left corner displays the voice/channel assignment, that is, which Visual Composer voice is to be recorded through which MIDI channel.
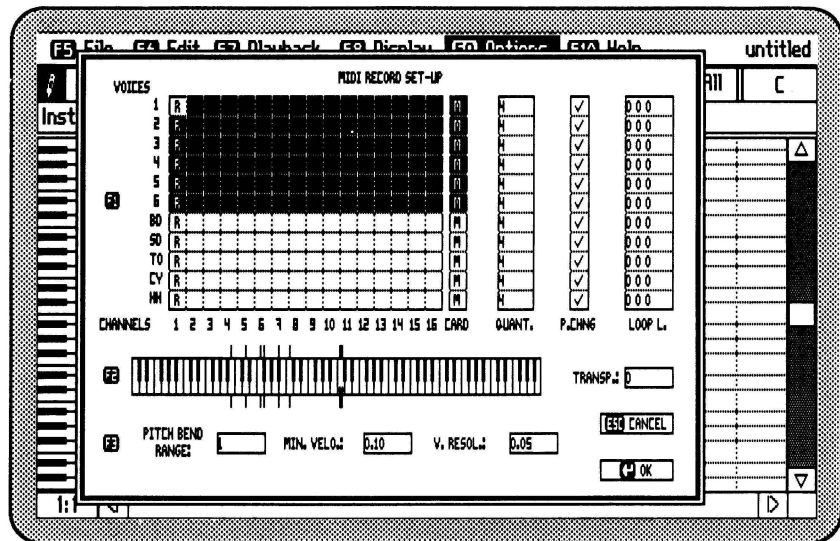

Figure 1:   The MIDI Record Set-Up

The default setting assigns all of the voices to channel 1. To change this setting, first press the [F1] key. This will activate a cursor which can be moved over the grid by using the arrow keys. You may then modify the set-up by positioning the cursor on a particular voice/channel location and performing one of the following actions:

- Pressing the [R] key will turn on the record mode in the corresponding voice.

- Pressing the space bar over an **R** will turn off the record mode in the corresponding voice.

NOTE: When recording voices, it is possible to monitor (listen to) the previously recorded voices while recording the new one. To do this, put an **M** on the desired voice/channel location.

Setting the Optional Use of the Ad Lib Synthesizer Card

The MIDI Record Set-Up window offers you, individually for each voice, the possibility to monitor the Ad Lib Card instead of the MIDI channels, as well as to use the card to listen to the voices you are recording (feedback).

The first column to the right of the large grid, entitled "Card", indicates which voices of the Ad Lib Card will be monitored.

By default, all voices are set to monitor (**M**). To change this:

- Press Tab to bring the cursor to the Card column. (Shift-Tab will bring you back to the main grid).

- Using the vertical arrow keys, place the cursor on the desired voice.

- If you do not want this voice to be played by the Card, press the space bar.
  Should you wish to put it back into play state, press the ⌨M key.

NOTE: The voices currently placed in the record mode on any of the MIDI channels may be monitored at the same time on the Ad Lib Card. However, the voices currently placed in the monitor mode on any of the MIDI channels cannot be monitored at the same time on the Ad Lib Card. Therefore, when placing a **M** on any location of the voice/channel grid, it removes the one placed in the corresponding voice on the Card column, and vice versa.

Recording the Music

To start the recording session, choose the MIDI Recording command in the Options menu. When you choose this command, a dialog box appears on the screen with the following message:

"Press Enter when ready to start recording."

NOTE: Before pressing the Enter key, you may preview your set-up by playing your MIDI instrument and listening to the resulting sound. Nothing will be recorded until you press Enter.

Press the ⏎ key to notify the program that you are ready to enter notes. From then on, you will hear a metronome at the tempo you have already set. The system is now in standby, and will wait until you start playing. The actual recording begins with the first note played on your instrument.

To stop recording, press any key on the computer keyboard. The entered notes are then placed at the beginning of the Visual Composer file. However, if the Select mode was activated before starting the recording session, the entered notes will be placed at the cursor's position. In both cases the recorded segment will replace a corresponding segment of the music already entered in the file.

Playing Back Music on MIDI Instruments

Playing back music with the Visual Composer/MIDI Supplement is as flexible as recording music with it. Although numerous options can be set with the commands MIDI Playback Set-Up and MIDI Presets of the Options menu, the default settings will be sufficient to undertake your initial playbacks.

Listening to the Music

The playback set-up is accessible through the MIDI Playback Set-Up command of the Options menu.

By default, music is played back on the Ad Lib Card. If you wish to play back one or more voices on the MIDI channels, place an **M** at the appropriate location of the MIDI voice/channel grid. (See the section, "Setting the Optional Use of the Ad Lib Synthesizer Card" for more information.)

In order to listen to the music you have entered, use the command Play or the command Play Voice of the Playback menu.

NOTE: Even though the Play command usually plays all voices, it will only play the voices marked with an **M** in the Playback Set-Up window. In the same manner, the active voice will be played with the command Play Voice only if it has an **M** in its row in the Playback Set-Up window.

Adjusting the MIDI Set-Up

The MIDI set-up on your Visual Composer/MIDI Supplement consists of several settings which specify how your computer should send and receive information from your MIDI instrument. Each time you open a new file, the program will open an empty document with default parameters. You may edit or change these parameters with the commands MIDI Record Set-Up and MIDI Playback Set-Up from the Options menu.

In the MIDI Record Set-Up, you can edit parameters controlling how your computer receives information from your MIDI instrument. In the MIDI Playback Set-Up, you can edit parameters controlling how your computer sends information to your MIDI instrument. This section explains how to set these parameters, most of which are effective in both record and playback modes, while a few apply to record mode only.

Figure 2:   The MIDI Playback Set-Up

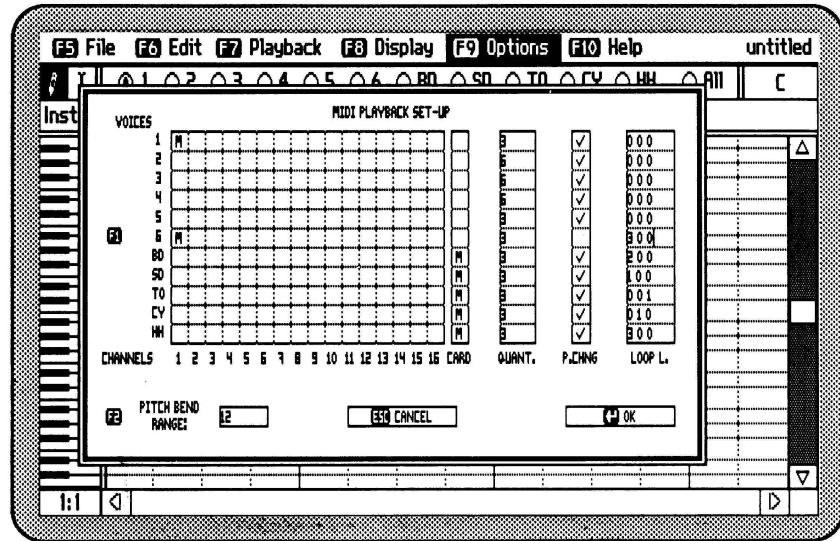## Setting Voice/Channel Assignments

In both of the MIDI Set-Up windows, the large, upper-left corner grid displays the voice/channel assignment. This is where you indicate in which voice and through which channel to record (**R**) or monitor (**M**).
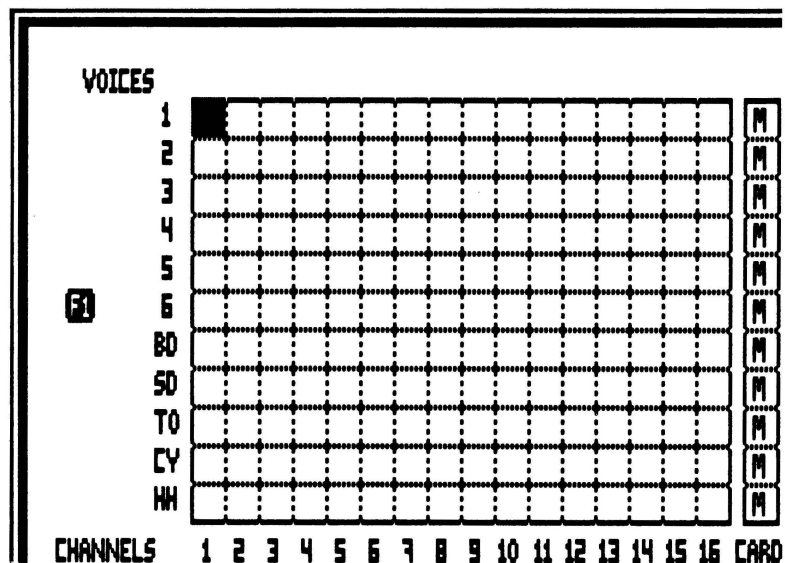

Figure 3:   The Main Grid

To activate this area, press first the ⌨F1⌨ key. Using the arrow keys, you can then move the cursor over the grid.

To set one of the two voice/channel assignments (**R** or **M**), or to remove an existing one, place the cursor on the appropriate voice and channel location, and choose one of the following commands:

- Pressing the ⬚**R** key will turn on the record mode in the corresponding voice (MIDI Record Set-Up only).

- Pressing the ⬚**M** key will turn on the monitor mode in the corresponding voice (MIDI Record Set-Up or MIDI Playback Set-Up).

- Pressing the space bar over an **R** or an **M**, will turn off the record mode or the monitor mode in the corresponding voice.

The monitor mode can, at any time, be assigned to the Ad LIb Card column situated at the right of channel No. 16.

Setting Keyboard Splits

Splitting a keyboard means assigning specific regions of a keyboard to specific voices. Split keyboard configuration determines which region will record which voice(s). Each region may be assigned to any MIDI channel.

The Visual Composer/MIDI Supplement allows you to split your keyboard or MIDI controller into up to 11 regions.

A given region can be assigned more than one voice at a time. The more voices assigned to a region, the more simultaneous notes can be recorded in that region. For example, if you split the keyboard into two regions and assign the first four voices to the lower region and a fifth voice to the higher region, then all single notes played in the upper region of the keyboard will be recorded in the voice No. 5 and all the notes played in the lower part of the keyboard (up to four notes simultaneously) will be recorded in voices No. 1 to 4.
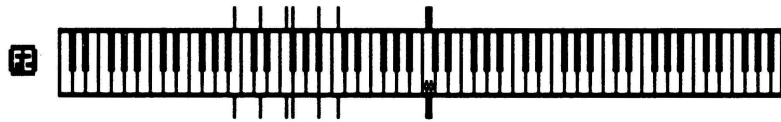
Figure 4:   The Keyboard Split Editor

The keyboard split is displayed in the piano keyboard placed at the bottom of the MIDI Record Set-Up window. The keyboard displays eight octaves: the grey key is middle C and the blinking vertical bar is the cursor.

To add a split point to your keyboard:

1. Open the MIDI Record Set-Up from the Options menu.

2. Activate the keyboard split editor by pressing the [F2] key.

3. Using the left and right arrow keys, place the cursor on the desired key.

4. Press the space bar to set the split point.

The split point will then be indicated by a small, vertical line above and below the key where the cursor was placed.

Each time you insert a split point, you are are dividing an existing region into two.

A split point indicates the lowest note of a region. (That is, the split point note is included in the region to its right.)

To assign one or more voices to a specific region:

1. Place the cursor anywhere in the keyboard region for which you wish to assign voices.

2. Press the ⌷F1⌷ key in order to activate the voice/channel assignment grid.

3. Press the ⌷R⌷ key to set the desired voice/channel assignment.

    Each voice set this way will be highlighted, and will respond to and record only those notes in the corresponding keyboard region.

To remove a keyboard split point:

1. Place the cursor over the split point you wish to remove and press the space bar.
    This will remove the split point corresponding to a voice/region assignment, thus joining the adjacent left and right regions.

NOTE: The keyboard split settings will affect only the recording. They do not apply to playback.

Setting the Pitch Transposition of a Keyboard Region

The keyboard may be split into regions for the purpose of automatically transposing the notes within a region. This may be useful, for example, when you wish to record notes that you want to be in an octave different from the one of the region played. In other cases, such as when using percussion voices, you may wish to indicate a specific transposition value for one or several specific notes.

Although the region in which to transpose will correspond to the keyboard splits in most cases, regions in which to transpose can be set independently. To avoid confusion between the two type of keyboard regions, we will refer to splits done for the purposes of transposing as transposition regions.

The transposition regions are indicated by the vertical lines underneath the keyboard in the set-up screen. The vertical lines above the keyboard actually indicate only the recording split region, but by default, the lower line is added when the recording split is created.

By default, a region's transposition value is set to zero semi-tones.

Transposition values are indicated in the box labeled "TRANSP." located at the right of the piano keyboard. This box is referred to as the transposition editor when a transposition value is being set. (See Figure 5, p. 29)
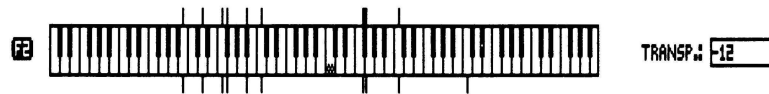
Figure 5:   The Pitch Transposition Editor

To set or change the transposition value of an existing region:

1.   Press F2 to activate the keyboard area of the Record Set-Up window.

2   Place the cursor at the beginning of the desired region, using the cursor keys.

3.   Press Tab to activate the transposition field. (The cursor will move to the TRANSP box.)

4. Specify the desired transposition value by entering directly the number of semitones to transpose up.

    To transpose down, type a minus (-) before the number.

    Press Tab to return to the keyboard.

5. If you wish to create new transposition regions within an existing region, move the cursor to other keys (with no line underneath) and repeat steps 3 and 4.

    This is quite similar to adding a split point as explained in the previous section, except that when the new transposition value is set, only the lower vertical line is displayed under the keyboard.

    A transposition region extends to the right up to the next lower vertical line and includes the start note.

To remove a transposition region:

1. Press [F2] to activate the keyboard area of the Record Set-Up window.

2   Use the arrow keys to place the cursor at the beginning of the target region.

3. Press Tab to activate the transposition editor.

4. Press the ⬅ key to remove the transposition split point.

5. Press Tab to return to the keyboard.

    The lower vertical line will disappear and the transposition value of the region to the left will be extended up to the next lower vertical line.

NOTES: As with the regular keyboard splits, there are maximum of 11 transposition regions available.
The default transposition regions created when making keyboard splits may be removed.

Setting Quantization

Quantization is the process by which the length of a recorded note is rounded off to achieve a certain degree of rhythmic accuracy called resolution. The resolution can be set by specifying the rhythmic value to which notes will be rounded. In Visual Composer, the maximum accuracy of the recording is relative to the number of ticks per beat specified. When not using quantization, the program rounds off note lengths to the nearest tick. Then, a very accurate reproduction of what was played is possible if a large number of ticks per beat is chosen for the recording.

However, a given rhythmic precision is not always wanted or needed for all the voices of a piece. For example, one may want to enter a piece with the first voice in sixteenths, while the second voice is in eighth note triplets. Visual Composer/MIDI permits you to set a specific quantization for each voice.

The program offers two types of quantization: input and output quantization which calculate the accuracy of the notes at recording and playback respectively. The input quantization is useful if you want to place correctly the played notes on the grid for an easier future reference. The output quantization is useful when you want to keep the recorded music in its most precise state.

To set the quantization:

1. Use the Ticks per Beat command of the display menu to set the overall maximum resolution you want, according to the smallest division of a beat required within the piece.

2. Select the MIDI Record Set-Up or the MIDI Playback Set-Up command from the Options menu.

3. Press the ⌊f1⌋ key and press the Tab key twice to move the cursor to the quantization column, which is the column labeled "QUANT". (See Figure 2, p. 22)

4. Using the up and down arrow keys, choose the voice for which you want to change the quantization.

5. Enter the smallest beat division you want for this voice. This value must be between 1 and 96.

NOTE: In order to avoid unexpected results, each quantization value must divide evenly the number of ticks per beat chosen for the grid.

Repeat steps 4 and 5 for each voice to be set.

Setting MIDI Presets to V.C. Instruments

When you use the Visual Composer/MIDI Supplement, you can associate, or map, each Visual Composer instrument with a different MIDI sound preset, or program number. You can map instruments to any MIDI program number from 1 to 128.

To change a MIDI program number assigned to a V.C. instrument, or to change a V.C. instrument assigned to a MIDI program number:

1. Choose the MIDI Presets command of the Options menu. A dialog box opens, displaying the list of instruments used in the current piece, with the corresponding MIDI preset number to its left. (See figure 6, p. 35)

NOTE: Initially, each instrument has no program number associated with it and the space to the left of the instrument name is blank.

2. Choose an instrument in this list by using the vertical arrow keys to scroll to the name you want.

3. Type in the MIDI program number you want for this instrument, or type in the instrument name you want for this MIDI program number.

NOTE: A given instrument name can appear at only one place in the list, although a given program number can appear at two or more places.

4. Press the ⟨F1⟩ key to replace this new assignment in the list.

5. Repeat the same process for each assignment you want to change.

6. Press the ⟨⏎⟩ key when you are finished to confirm your choices.

    For each instrument change, the new name will now replace the old name in the interpretation data bar.

When recording, you may use program numbers available on your MIDI instrument that have not been assigned to existing V.C. instruments. In this case, Visual Composer will display these numbers in the interpretation data bar instead of instrument names. If you monitor such a voice on a MIDI channel, the program number will correspond to the preset number of your MIDI instrument. But if you monitor the same voice on the Ad Lib Card, the program will not find any corresponding instrument and will display an error message.

When you save a Visual Composer/MIDI piece in which you have set the MIDI presets, the program numbers will be saved as well.

If the program does not play your pieces with the MIDI sound you expected, check the program numbers you have used. Different synthesizers use different program numbers and may not recognize the entire range of possible values. Visual Composer/MIDI uses numbers from 1 to 128. If you are uncertain of the numeric correspondence, check your synthesizer owner's guide.

Also, if you did not assign any MIDI program numbers in a piece, when you play back the piece on your instrument, the sounds produced will depend on your instrument's default settings or what you may have selected manually.
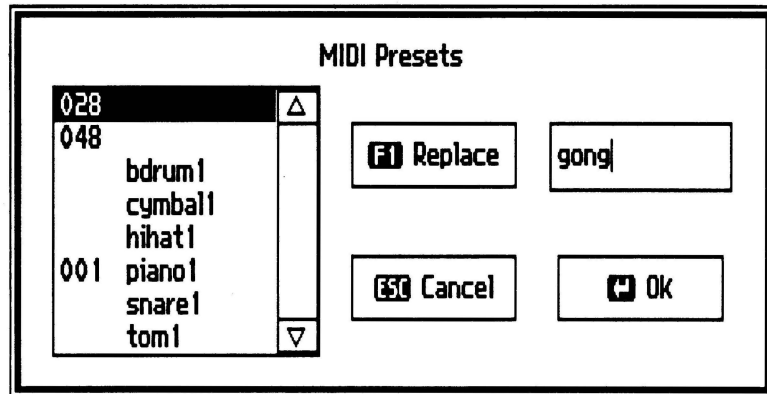
Figure 6:   The MIDI Presets Command

Setting Program Changes

Most Visual Composer pieces use several different instruments and quite often these intrument changes occur simultaneously in several voices. If you are sending more than one voice to the same channel on your synthesizer, the synthesizer will receive all instrument changes in each voice. This creates the possibility of your instrument receiving several instrument changes simultaneously on the same channel. In such a case it is not clear which instrument change will actually take effect.

To avoid this confusion, you can disable the sending of program (instrument) changes for all voices except one. You can also disable the send program changes setting for all voices, in which case the program will not make any changes to the sound preset you manually select on your synthesizer.

To disable the sending of program changes:

1. Choose the MIDI Playback Set-Up command of the Options menu.

2. Press the F1 key and use the Tab key three times to activate the Send Program Changes check column, which is the column labeled "P.CHNG".

3. Using the vertical arrow keys, move to the desired voice and press the space bar to remove the check from the box.

NOTE: Pressing the space bar over an empty box will re-enable the sending of program changes for that voice.

4. Repeat the above operation for each voice you wish to set.

5. Press the ⏎ key when you are finished to confirm your choices.

If you are using more than one synthesizer or a multi-timbral synthesizer which can play more than one preset sound at the same time, then you can send program changes from several voices/channels at the same time by checking the appropriate boxes in the Send Program Changes column.

Setting Looping

An interesting and very characteristic feature of MIDI sequencers is looping. Loops are short segments or patterns that repeat, or loop, over and over throughout a song. The Visual Composer/MIDI Supplement includes extensive looping options: you can loop segments at recording or playback, for any monitored voice(s) and for a chosen loop length.

To set the looping:

1. Choose the command MIDI Record Set-Up or MIDI Playback Set-Up of the Options menu.

2. Using the Tab key, activate the loop edit column which is labeled "LOOP L.". (See Figure 1, p. 16)

3. Using the vertical arrow keys, select a voice to be looped, then write the desired loop length by entering numbers in the following order: number of bars (1 or 2 digits), space, number of beats (1 or 2 digits), space, number of ticks (1 or 2 digits).
    If you enter only two numbers, these will be the number of beats and the number of ticks. If you enter only one number, it will be taken as the number of ticks.

Ex.: Type 2 1 4 for a 2 bar, 1 beat and 4 tick long loop.
  Type 2 1 0 for a 2 bar and 1 beat long loop.
  Type 2 0 4 for a 2 bar and 4 tick long loop.
  Type 2 0 0 for a 2 bar long loop.
  Type 1 4   for a 1 beat and 4 tick long loop.
  Type 1 0   for a 1 beat long loop.
  Type 4   for a 4 tick long loop.

4. Repeat the same operation for each voice you want to set looping.

5. Press the ⏎ key when you are finished to confirm your choices.

Each monitored voice set to loop a segment as specified in the above procedure will loop the segment for the duration of the piece.

To remove a loop:

1. Choose the command MIDI Playback Set-Up or MIDI Record Set-Up of the Options menu.

2. Using the Tab key, activate the loop editor column ("LOOP L.").

3. Using the vertical arrow keys, select a voice and cancel the loop length of this voice by entering a zero or pressing the ⬅ key.

4. Repeat the same operations for each voice in which you wish to remove a loop.

5. Press the ↵ key when you are finished to confirm your choices.

Setting Pitch-Bend Range

Pitch-bend is the term used to indicate variations in pitch. It is a musical parameter that can be transmitted via MIDI data. This information is often sent by an instrument controller called a pitch-bender or pitch wheel. However, the actual sounding pitch variation can vary according to the specific pitch-bend range of an instrument. With Visual Composer/MIDI, you may specify the range within which the program will respond to pitch-bend variations.

To set the pitch-bend range:

1. Choose the command MIDI Record Set-Up or MIDI Playback Set-Up of the Options menu.

2. Press the [F3] key to activate the pitch-bend editor which is the first box on the bottom, left line. (See Figure 1 or 2 on pp. 16 or 22.) If necessary, use Tab and Shift-Tab to move to the next right or left box.

3. Type in a number between 1 and 12 for the number of semitones to be used for the pitch-bend range.

NOTE: The number of semitones you enter for this setting is an absolute number. The pitch-bend can raise or lower the pitch by this quantity. For example, if you set the pitch-bend range to one semitone, it will encompass the range of one semitone higher and one semitone lower than the absolute pitch of the notes.

4. Press the [↵] key to confirm your choice.

All pitch-bend variations will be entered in Visual Composer as pitch accuracy data in the interpretation data bar. For the voices monitored on the Ad Lib Music Synthesizer Card, the pitch-bend will vary according the range you have specified. For the voices monitored on a MIDI channel, the pitch-bend will respond according to the range you manually set on your synthesizer.

Setting Velocity Threshold and Resolution

Velocity is the MIDI term used to indicate the loudness with which notes are played. Like the pitch-bend, this is a musical parameter that can be transmitted via MIDI data. The Visual Composer/MIDI Supplement can record the volume nuances if your MIDI keyboard can detect the force (velocity) with which you play its keys.

You can control how the program will receive the velocity via two parameters: the velocity threshold and the velocity resolution.

The velocity threshold is the minimum velocity at which the program will record notes.

To set the velocity threshold:

1. Choose the MIDI Record Set-Up command of the Options menu.

2. Press the F3 key and use the Tab key to move to the velocity threshold box (labeled "MIN VELO.").

3. Enter a number between 0.01 and 0.99 for the value to be used as the velocity threshold.

4. Press the ↵ key to confirm your choice.

The velocity resolution is the nearest value to which the program will round off volume change data. For example, if this value is set to 0.10, then all volume changes will be rounded off to nearest multiple of 0.10. The purpose of this is to avoid generating a lot of data for tiny volume changes which are generally unintentional and inaudible.

To set the velocity resolution:

1. Choose the MIDI Record Set-Up command of the Options menu.

2. Press ⟦F3⟧ and use the Tab key to move to the velocity resolution box (labeled "V. RESOL.").

3. Enter a number between 0.01 and 0.99 for the value to be used as the velocity resolution.

NOTE: We recommend not setting the velocity resolution to too small a value as this will generate a lot of data.
By convention, a velocity resolution of 0.00, will make the program record no velocity.

4. Press the ⟦↵⟧ key to confirm your choice.

When recording, key velocities will be entered in Visual Composer according to these two settings. Velocity changes will be displayed as volume markings in the interpretation data bar. The program will then respond to these markings if you monitor on the Ad Lib Card. If you monitor on a MIDI channel, the volume changes will depend on your instrument's capabilities and settings.

Setting the MIDI Clock

The MIDI clock allows you to synchronize your computer with MIDI instruments, drum machines or other computers. Using the MIDI clock, Visual Composer/MIDI can receive and adopt the tempo of a MIDI instrument, or send its internal tempo to a MIDI instrument.

MIDI Clock Out synchronizes MIDI instruments, such as drum machines or sequencers, to the Visual Composer's tempo. When you choose MIDI Clock Out, V.C. includes a regular clocking or metronome signal with the notes it sends to the MIDI interface. These signals control the tempo at which the MIDI instrument plays. As the Visual Composer increases or decreases its tempo, so does the MIDI instrument.

MIDI Clock In synchronizes the Visual Composer to an external source, such as drum machine or another computer. When you choose MIDI Clock In, the Visual Composer receives clocking or metronome signals from the MIDI instrument, causing it to adopt the tempo of the MIDI instrument to which it is connected. As the MIDI instrument increases or decreases its tempo, so does the Visual Composer.

When Visual Composer is synchronized to an external MIDI clock (MIDI Clock In), playback and recording functions do not start immediately. In both cases, the program prepares itself and waits in standby until it receives a starting signal from the master MIDI component. Once the playback or recording has begun, the program will run until it receives a stop signal from the master MIDI component. (You can also stop the playback or recording anytime by sending an interrupt command from your computer keyboard).

With Visual Composer/MIDI , you can choose either MIDI Clock Out or MIDI Clock In for recording or playback. However, you cannot select both at the same time.

To set the MIDI clock:

1. Choose the command MIDI Sync of the Options menu.

2. Select the type of synchronization by pressing the space bar to toggle between the In and Out options. (See Figure 7)

3. Press the ⏎ key to confirm your choice.

```
┌─────────────────────────────────────┐
│ ┌─────────────────────────────────┐ │
│ │                                 │ │
│ │            MIDI Sync            │ │
│ │                                 │ │
│ │                                 │ │
│ │     ◉ [F1] Internal Clock       │ │
│ │     ○ [F2] External Clock       │ │
│ │                                 │ │
│ │                                 │ │
│ │   ┌───────────┐ ┌───────────┐   │ │
│ │   │ [ESC] Cancel │ │ [⏎] Ok  │   │ │
│ │   └───────────┘ └───────────┘   │ │
│ │                                 │ │
│ └─────────────────────────────────┘ │
└─────────────────────────────────────┘
```
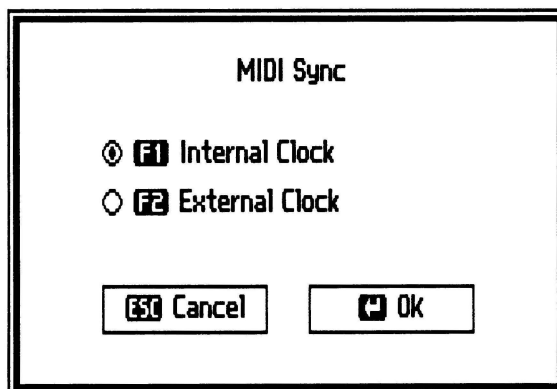
Figure 7:   The MIDI Sync Command

Editing Music

As you use Visual Composer/MIDI, you may feel the need to perform editing operations on your music. If you want, for example, to correct a whole recorded sequence, you may have to replay it. But if you want only to change several notes or a short sequence, Visual Composer offers various editing features for manipulating the musical data stored in your files.

Step-time Editing

Using the Visual Composer editor, you may add, change or delete individual notes or you may work on groups of notes. You may also change four types of interpretation data: volume, pitch accuracy, timbre and tempo   For details on editing this way, please refer to the Visual Composer User Guide.

The type of editing discussed above is called step-time editing. However, there is another type of editing, real-time editing, which allows you to edit using your MIDI instrument.

Real-time Editing

Just as you can enter music with a MIDI instrument, the Visual Composer/MIDI Supplement allows you to modify any already entered music by recording over segments of memory in real time. You can enter and record portions of music anywhere in an existing music file in the same way you enter and record entire pieces with a MIDI instrument. The main advantage of this feature, often referred to as punching in and out, is to edit or correct a particular part of a recording in real time without having to re-record the entire piece.

Punch-in and punch-out points determine the beginning and the ending points of a section of recorded music into which new notes will be entered. With the Visual Composer/ MIDI, the punch-in point is defined by a cursor placed at the beginning of a segment, and the punch-out point happens automatically at the end of the real time recording.

To edit music in real time:

- Choose the command MIDI Record Set-Up in the Options menu, and set the voice or voices you wish to change in real time. Then, press the ⏎ key to confirm your choice and return to the Visual Composer main window.

- Press the ⌈F2⌋ key to activate the Select Mode. Then, using the scrolling commands, place the cursor at the beginning of the segment to be edited.

- Activate the recording by choosing the command MIDI Recording in the Options menu. After this, you will have to press the ⌈↵⌋ key to confirm your choice.

- The system is now waiting in standby, playing a metronome. The actual recording will start at the first note played on your instrument (or at the start signal in the option MIDI Clock In).

- You can then edit the selected passage by playing the notes you wish to enter.

- At the end of the selected passage, stop the recording by pressing any key on the computer keyboard.

The entered notes will be placed into the corresponding music file according to the input set-up and the punch-in and punch-out points you have chosen. You may then verify the result by playing back the new version of your piece.

Quick Reference

This section systematically describes all of Visual Composer/
MIDI Supplement's commands. It is divided into two parts: the
first describes the menu commands related to the MIDI option;
the second covers the available keyboard commands when
using the MIDI option. For the standard Visual Composer
commands, refer to the Visual Composer User Guide.

Menu Commands

All of the commands relating to MIDI are displayed in the
Options menu. To open this menu, press the F9 key. To close
the menu, use the Esc key.

```
F5 File   F6 Edit   F7 Playback   F8 Display   F9 Options   F10 Help          untitled
                                            ✓ With Percussion
                                              Without Percussion

                                            ✓ Audio Feedback

                                              Start MIDI Recording...   CTRL M
                                              MIDI Record Set-Up...     CTRL J
                                              MIDI Playback Set-Up...   CTRL k
                                              MIDI Presets...           CTRL L
                                              MIDI Sync...
```
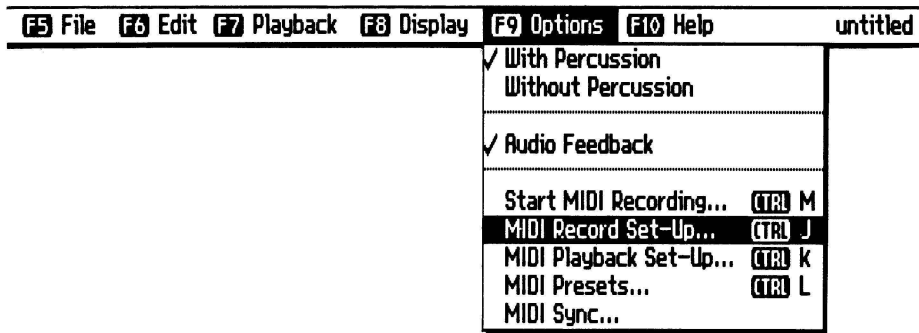
Figure 8: The Options Menu

49

The Options Menu

MIDI Record Set-Up...

The MIDI Record Set-Up option contains the settings that specify how your computer should receive information from your MIDI instrument. It also allows you to set some useful recording features such as looping and the monitoring of specific voices.

MIDI Playback Set-Up...

The MIDI Playback Set-Up option contains the settings, or parameters, that specify how your computer should send information to your MIDI instrument.

MIDI Presets...

This command is used to associate, or map, Visual Composer instruments to MIDI sound presets, or program numbers. You can map V.C. instruments to any MIDI program number from 1 to 128. Each instrument used at the playback corresponds to a number telling the MIDI synthesizer what sound to play.

Start MIDI Recording...

This command enables you to record music with a MIDI instrument. When you choose this command, a dialog box appears on the screen prompting you for a confirmation. From then on, you will hear a metronome, and the first note played on your MIDI instrument will start the recording.

MIDI Sync...

This command enables you to set the synchronization mode of the Visual Composer/MIDI Supplement. The option MIDI Clock Out allows you to synchronize external MIDI components to the Visual Composer clock, while the option MIDI Clock In allows you to synchronize the Visual Composer to an external MIDI component.

The Help Menu

MIDI Options

When you choose one of the MIDI categories of the Help menu
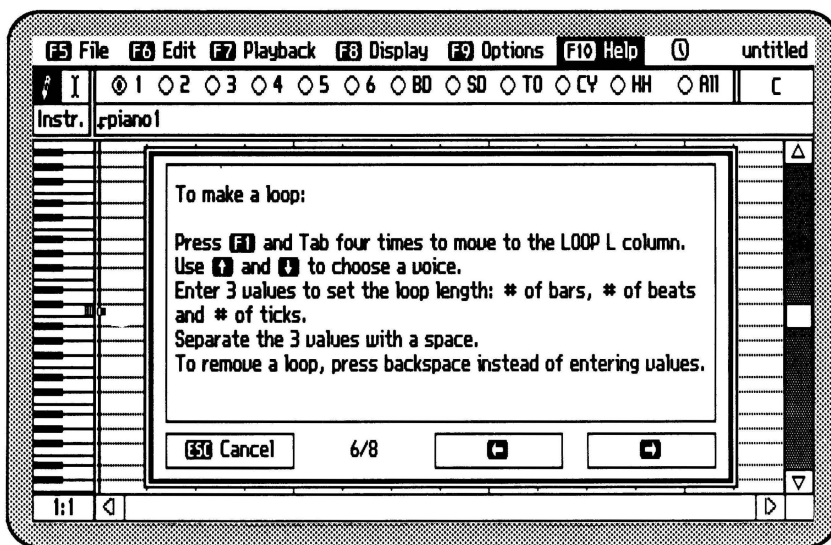([F10] key), a window opens giving you summarized information
about the MIDI commands.

Figure 9: MIDI Option Help Screen

Keyboard Commands

Function Keys

F1	Within the MIDI Record Set-Up or MIDI Playback Set-Up dialog, activates the first line of edit fields (boxes) and highlights the first one at the left.
	Within the MIDI Presets dialog, replaces a program change number or an instrument name in the instrument list.

F2   Within the MIDI Record Set-Up or MIDI Playback Set-Up dialog, activates the second line of edit fields and highlights the first one at the left.

F3   Within the MIDI Record Set-Up dialog, activates the third line of edit fields and highlights the first one at the left.

Arrow keys

← or →   Within the MIDI Record Set-Up or MIDI Playback Set-Up dialog, moves the grid cursor or the keyboard cursor to the left or to the right.

⬆ or ⬇	Within the MIDI Record Set-Up or MIDI Playback Set-Up dialog, moves the grid cursor or the column cursor up or down.
	Within the MIDI Presets dialog, moves an indicator in the instrument list.
Ctrl + ← or Ctrl + →	Within the MIDI Record Set-Up dialog, moves the keyboard cursor to the next C key to the left or to the right.

Other Keyboard Commands

Tab	Within the MIDI Record Set-Up or MIDI Playback Set-Up dialog, moves the cursor to the next edit field (box) to the right.
⇧ + Tab	Within the MIDI Record Set-Up or MIDI Playback Set-Up dialog, moves the cursor to the next edit field to the left.
Ctrl + J	Activates the MIDI Record Set-Up command.
Ctrl + K	Activates the MIDI Playback Set-Up command.
Ctrl + L	Activates the MIDI Presets command.
Ctrl + M	Activates the MIDI Recording command.
R	Within the MIDI Record Set-Up dialog, sets the selected voice and channel to record mode.

⊡ Ⓜ

Within the MIDI Record Set-Up or MIDI Playback Set-Up dialog, sets the selected voice and channel to monitor mode.

⊡ ↵

Confirms a choice and closes the dialog box.

⊡ Esc

Closes a dialog box, cancelling the operation.

⊡ ⟵

Within the quantization edit field of the MIDI Record Set-Up or MIDI Playback Set-Up dialog, cancels a quantization value.

Within the looping edit field of the MIDI Record Set-Up or MIDI Playback Set-Up dialog, cancels a looping value.

Within the transposition edit field of the MIDI Record Set-Up dialog, clears a transposition value and, if the cursor is positioned on a split mark, clears the corresponding split point.

⊡
(Space bar)

Within the voice/channel assignment grid of the MIDI Record Set-Up or MIDI Playback Set-Up dialog, cancels the selected operation mode (**R** or **M**).

Within the piano keyboard of the MIDI Record SetUp dialog, sets or cancels a split point at the cursor location.

Within the MIDI Clock editor of the MIDI Record Set-Up or MIDI Playback Set-Up dialog, toggles between the MIDI Clock In and the MIDI Clock Out sync options.

Appendix A
List of Default Settings

Each new music file you open includes default settings to help you use the MIDI options without having to set a lot of parameters. Visual Composer/ MIDI will use these default until you specify other settings.

The following tables list the program's default values for the MIDI options.

MIDI Record Set-Up

Setting	Default Values
Voice/Channel Assignment	All voices recorded on channel #1 and monitored on the Ad Lib Card
Quantization	Equivalent to the grid resolution (Default grid resolution: 4 ticks per beat)
Program Changes	All voices set to receive program changes
Looping	None (0 0 0)

Keyboard Split with perc.

Voices 1 to 6:	C3 – C8
Bass Drum:	B1 – C#2
Snare Drum:	D2 – E2
Tom:	F2
Hi-Hat:	F#2 – A2
Cymbal:	A#2 – B2
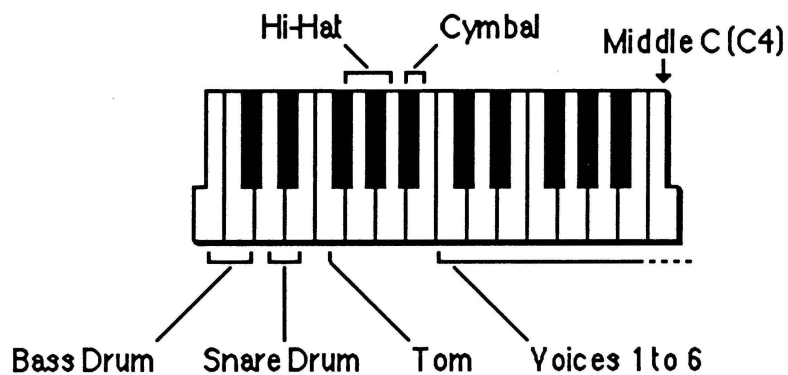
Figure 10: Keyboard Split with percussion

Keyboard Split without perc.	None	
Transposition Offset	Tom region (F2):	-5
	Other regions:	None
Pitch-Bend Range	1 semitone	
Velocity Threshold	0.10	
Velocity Resolution	0.05	
MIDI Clock	Out	

MIDI Playback Set-Up

Voice/Channel Assignment	All voices monitored on the Ad Lib Card
Quantization	Equivalent to the smallest grid resolution
	(Default grid resolution: 4 ticks per beat)
Program Changes	All voices set to send program changes
Looping	None (0 0 0)
Pitch-Bend Range	1 semitone
MIDI Clock	Out

MIDI Presets

V.C. Instruments available	With percussion: 6 instruments (Piano1 and the 5 percussion instruments) Without percussion: 1 instrument (Piano1)
Preset number assignation	None

Appendix B
Glossary of Midi Terms

NOTE: Words appearing in bold type in the definitions are, themselves, separate entries in this glossary.

Alternate Controllers
MIDI devices that do not generate sound themselves but generate MIDI **data** in **real time** to provide alternate modes of playing MIDI **slaves**. They include the well-known keyboard controllers as well as guitar, horns, drums, violin and xylophone controllers.

Clock
A timing signal used to control the tempo of music recording and playback, and to synchronize different components in a system.
See also **MIDI Clock**.

Channel
See **MIDI Channel**.

Controller
Any **MIDI** instrument device that can transmit or receive musical information other than keyboard notes, such as **pitch-bend**, modulation wheel, breath controller, pedals, footswitches, etc.

Data
Information encoded in a form that can be processed by computers.

Drum Machine
Musical device which produces electronic drum sounds and performs various rhythmic patterns.

Edit	To correct **data** in a file by deleting, inserting and changing information. Editing is used to correct playing mistakes, experiment with different ideas or change musical parameters.
File	The unit in which **data** is stored in **memory**. Each file can contain the notes of a musical piece and their related interpretation data.
Hardware	The physical equipment involved in a computer or **MIDI** system, such as the computer component itself, electronic cards, MIDI **interface**, etc.
Input	A signal of **MIDI** information entering a component, or the point at which it enters.
Interface	A device which connects to a component in order to allow it to communicate properly with other devices.
Load	To insert information, usually a **data file** or a **program** file, into a computer's main **memory**.
Looping	In the context of **sequencers**, a feature which repeats short segments or patterns indefinitely throughout a song.
Master	A **MIDI** component that sends MIDI information to control other components called **slaves**.
Memory	The storage facility of a computer, capable of accepting, saving and "remembering" given amounts of **data**.

MIDI	Acronym for Musical Instrument Digital Interface, an international standard specification which allows MIDI-equipped devices to transmit and receive musical information.
MIDI Cables	Connecting wires which transmit musical **data** between **MIDI** devices.
MIDI Channel	"Address" used in a **MIDI** signal for the transmission and reception of specific musical information. Though **data** sent on all 16 MIDI channels travels through the same **MIDI cable**, a MIDI device will only receive data on the channel or channels it has been assigned to accept.
MIDI Clocks	Timing messages that synchronize different **MIDI** components in a system. Using the MIDI clock, a given MIDI component can receive and adopt the tempo of another component (MIDI clock in), or send its internal tempo to other components (MIDI clock out).
MIDI Interface	The device which connects **MIDI** instruments to a computer.
MIDI In	The connector that allows a **MIDI** device to receive MIDI signals.
MIDI Modes	**MIDI** settings that define a specific way that an instrument will respond to the **data** it receives. These operational modes are based on two factors: **channel** assignment (omni on/off) and voice assignment (poly/mono).

MIDI Out	The connector that allows a **MIDI** device to send MIDI signals.
MIDI Thru	The connector that allows a **MIDI** device to pass an exact copy of the MIDI signal received at its own **MIDI In Port** to the MIDI In Port of another device.
Monitoring	In electronic music terminology, listening to music through various devices in order to have a sounding reference.
Mono Mode	**MIDI** setting that enables a **synth** to receive and play monophonically MIDI **data** on one MIDI **channel**.
Monophonic	A musical term used to describe a single voice instrument, such as a saxophone or clarinet. In **MIDI** terminology, refers to a device capable of producing or processing only one note at a time.
Mono-timbral	Term used to describe **MIDI** synthesizers or keyboards which can produce only one sound or timbre at the same time.
Multi-timbral	Term used to describe **MIDI** synthesizers or keyboards which can produce two or more different sounds or timbres at the same time.
Note Off	**MIDI** information that indicates the end of a note, and corresponds to the physical action of releasing a key.

Note On	**MIDI** information that indicates the beginning of a note, and corresponds to the physical action of pressing a key.
Omni Mode	**MIDI** setting that enables a **synth** to receive and play polyphonically all MIDI **data** from all MIDI **channels**.
Output	A signal of **MIDI** information leaving a component, or the point at which it leaves the component.
Patch	Refers to an ensemble of control settings for a **synthesizer**, an effects device or other component, that can be recalled as a unit. For example, the settings of a sound **preset** on a synthesizer.
Pitch-Bend	Musical parameter transmitted in **MIDI data** to indicate variations in pitch. This information is often sent by an instrument **controller** called a pitch-bender or pitch wheel.
Playback	Refers to the playing of previously recorded music, for listening and verification.
Poly Mode	**MIDI** setting that enables a **synth** to receive MIDI **data** on a single MIDI **channel**and play it back polyphonically.

Polyphonic	A musical term used to describe a multi-voice instrument, such as a piano or an organ. In **MIDI** terminology, refers to a device capable of producing or processing more than one note at a time.
Ports	**MIDI** connectors of a component to which the **MIDI cables** are connected. There are three different MIDI ports: "out", "in", and "thru". See also **MIDI Out, MIDI In** and **MIDI Thru**.
Preset	One of the different sounds or timbres available on a given **synthesizer** or **MIDI** keyboard.
Program	In computer terminology, a set of computer instructions designed to perform a particular task or application. In general, sets of stored information.
Program Changes	In **MIDI** terminology, refers to the MIDI **data** that transmits specific **preset** number change between components.
Punching In and Out	A **sequencer** feature which allows the user to **edit** or correct a particular part of a recording in **real time** without having to re-record the entire piece.
Quantization	Process by which the rhythmic placement of a recorded note, or a note to be recorded (**note on** and **note off**), is rounded off to achieve a certain degree of rhythmic accuracy.

Real Time	Term used to refer to what is occuring in actual time or live, as in the normal course of a performance. See also **step-time**.
Recording	In **MIDI** terminology, the act of entering music with a MIDI instrument by processing and saving musical MIDI **data** in memory. Also refers to what is recorded.
Sequence	A **sequencer recording** of music **data**.
Sequencer	"Dedicated sequencers" are **hardware** systems, pre-programmed to record, **edit**, enter and play back musical information entered in either **real** or **step-time**. Sequencers can be **software** programs that perform the functions of their hardware counterparts, but are controlled from a computer.
Slave	**MIDI** component that receives MIDI signals from another component called the **master**.
Software	The **program** or set of instructions describing the tasks to be performed by a computer system.
Step-Time	Refers to a method of entering and editing musical information into **memory** one step at a time.
Split-Keyboard	Refers to an instrument that splits its voices between different regions of the keyboard.

Split Point	Refers to the boundary which separates two adjacent regions in a **split-keyboard**.
Sync	Abreviation for **synchronization**.
Synchronization	Adjusting the timing of musical events so that they coincide perfectly in time.
Synth	Abbreviation for **synthesizer**.
Synthesizer	An electronic instrument which creates and produces a variety of sounds, usually by means of a keyboard.
Thru	See **MIDI Thru**.
Tracks	Independent **memory** banks which store musical information in **MIDI sequencers**. It corresponds to Visual Composer's voices, except that these voices are always **monophonic**, while tracks can be **polyphonic**.
Velocity	**MIDI** term used to indicate how quickly a key has been pressed. It determines the volume of the note.

Appendix C
Using a Mouse

This appendix explains how to use Visual Composer/MIDI with a mouse.

Loading Visual Composer/MIDI Supplement with a Mouse Driver

Visual Composer/MIDI automatically detects and utilizes a mouse driver if one is loaded. Load your mouse driver according to the instructions that came with the mouse. Next, load Visual Composer/MIDI in the usual fashion. The program is compatible with the Microsoft mouse (and compatibles) and Mouse Systems PC Mouse.

NOTE: You may integrate the loading of the mouse driver with the COMPOSER.BAT file.

When the mouse driver is already installed but you don't wish to use it, load the program with the option "/-m". This option prevents the automatic utilization of the mouse driver. At the DOS prompt, type:

A>**COMPOSER /-M**

Program Particularities When Using a Mouse

The particularities of Visual Composer/MIDI with a mouse occur in the following operations:

- Choosing an element

- Modifying the MIDI settings

Choosing an element

- A command in a menu

  Position the pointer on the title of the desired menu. Click and drag to the chosen command, then release the mouse button.

- A file in a list

  Click and drag to the name of your choice, then release the mouse button. If the list of files is too long for the window, click on the arrow in the scroll bar to scroll the list.

Modifying the MIDI settings

- To set the voice/channel assignment.

    Click on the voice/channel location you want whereupon a square cursor will be highlighted. You may also click and drag the cursor to a point you wish to assign. After this, type the letter corresponding to the operation mode you want for this voice, or press the space bar to cancel an already entered letter.

- Edit field.

    Click on the box where you wish to change or enter data. A black rectangle, the edit field, will appear wherupon you may enter the appropriate information.

- Check box.

    Click on the box of your choice: this parameter will either switch on or off and, depending on the case, a check mark inside the box will either appear or disappear.

- Button inside a window.

  Click the button of your choice. The action described on the button will automatically be put into effect.

- Keyboard split point.

  To set or cancel a keyboard split point in the record set-up window, first point the arrow to the desired key of the keyboard and click, whereupon a cursor will start flashing. You may also click and drag the cursor to the key you wish. After this, press the space bar and proceed as explained in the "Setting Keyboard Split" section.

- Transposition offset.

  After you have set a split point, click on the transposition edit field and enter the transposition value you want for this region.

Appendix D
MIDI Implementation Chart

Visual Composer/MIDI Supplement   Date: Aug., 1988

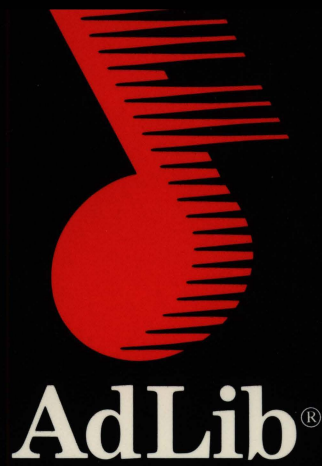Model : –   **MIDI Implementation Chart**   Version : 1.0

Function...		Transmitted	Recognized	Remarks
Basic	Default	x	1	
Channel	Changed	1-16	1-16	
	Default	4 (*1)	4 (*1)	Up to 11 voices
Mode	Messages	x	x	
	Altered		Mode 4 3, 2, 1	
Note		12-107	0-127	
Number	True Voice		12-107	
Velocity	Note ON	o v=1-127	o v=1-127	Adjustable (tr. + res.)
	Note OFF	x 9n, v=0	x	
After	Key's	x	x	
Touch	Ch's	x	x	
Pitch Bender		o	o 0-12 semitones	5 bit resolution/semitone
Control Change				
Prog		o 0-127	o 0-127	
Change	True #	0-127	0-127	
System Exclusive		x	x	
System	: Song Pos	x	x	
	: Song Sel	x	x	
Common	: Tune	x	x	
System	: Clock	o	o	
Real Time:	Commands	o	o	Except "Continue"
Aux	: Local ON/OFF	x	x	
Mes-	: All Notes OFF	x	x	
sages	: Active Sense	x	x	
	: Reset	x	x	
Notes		*1 : It is possible to simulate, to a certain degree, the Modes 1 and 3, by setting manually the voice/channel assignment.		

Mode 1 : OMNI ON, POLY   Mode 2 : OMNI ON, MONO   o : Yes
Mode 3 : OMNI OFF, POLY   Mode 4 : OMNI OFF, MONO   x : No

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