AdLib™
Personal Computer Music System

Instrument Maker™

User Guide

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Ad Lib Instrument Maker

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Table of Contents

Introduction

This guide describes and explains Instrument Maker, a program with which you can create new instrumental sounds for your Ad Lib Music Synthesizer Card. These sounds will be of particular use with Visual Composer, where you can arrange them in various ways to create your own compositions.

The first section, entitled "Getting Started", tells you everything you should know before using the program.

The second section, "Description of the Synthesizer", briefly explains the theory behind the two synthesis methods used with the Ad Lib Music Synthesizer Card, and the role of parameters in the creation of a sound.

The third section, "Using Instrument Maker", explains the way to use the program and gives an example demonstrating how to create the sound of a trumpet.

The fourth section, "References", reviews each of the commands found in the menus.

Finally, in the appendices, you will find a list of preset sounds provided with the program; an inventory of possible error messages; and information pertinent to using a MIDI keyboard and a mouse.

To take full advantage of the numerous possibilities offered by Instrument Maker, we recommend that you carefully read this guide and try out all the functions of the program.

Getting Started

This chapter lists the equipment required to run this program, lists the contents of the diskette, shows you how to make a startup diskette containing a copy of Instrument Maker, and explains how to load the program.

Required Equipment

To run Instrument Maker, you need the following equipment:

1. The Ad Lib Music Synthesizer Card.
2. A computer:
   IBM PC, PC XT, PC AT or a compatible equipped with at least a 360K disk drive and having 256K of memory.
3. A graphic display card:
   IBM Color Graphics Adapter (CGA) or IBM Enhanced Graphics Adapter (EGA) display card.
4. An operating system:
   PC/MS-DOS 2.00 or all latest versions.
5. Headphones, Speakers or Stereo System.

NOTE: You can also use Instrument Maker with a MIDI interface and with a mouse. Consult appendices C and D for details.

Contents of the Diskette

The Instrument Maker diskette contains several files related to the program:

- AUTOEXEC.BAT
  This file automatically loads Instrument Maker from the moment your computer is turned on.
- INSMAKER.BAT
  This file contains the command sequence which loads Instrument Maker from the DOS.
- INSMAK1.EXE
  This file contains the main part of Instrument Maker. Never directly load this file. Instead, use the file INSMAKER.BAT which contains the normal loading sequence.
- INSMAK1.RSR
  This file contains the resources needed to run Instrument Maker.
- SOUND.COM
  This file contains the sound driver of the Ad Lib Music Synthesizer Card.
- MPU401.COM
  This file contains the driver for the ROLAND MPU-401 MIDI interface.
- *.INS:
  The ".INS" type files contain the instrumental sounds.

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

The SOUND.COM, INSMAK1.EXE and INSMAK1.RSR files must always be in the current directory.

Before continuing, we suggest that you take a look at the README.TXT file. To display this file:

1. Insert the diskette into drive A.
2. Type the following:
   A>**TYPE README.TXT**

Making a Startup Diskette

Before using Instrument Maker, it is essential to make a copy. Afterwards, put the original away in a safe place.

To begin operating, the computer needs a diskette containing the DOS system files. You must therefore make such a diskette, on which you will also place a copy of Instrument Maker.

1. Insert a DOS diskette into drive A. This diskette must contain the FORMAT program.

2. Execute the FORMAT program and specify the option which will include a copy of the system files:

   A>**FORMAT A:/S**

NOTE: Your DOS manual contains all the details concerning the **FORMAT** command and the option **/S.**

3. The FORMAT program will ask you to insert a blank diskette into drive A.

4. When the operation is complete, insert the Instrument Maker diskette into drive B.

5. Copy the contents of drive B onto the diskette in drive A:

   A>**COPY B:*.*/V**

   The diskette in the disk drive A is now a startup diskette containing the Instrument Maker program.

NOTE: These instructions apply to a double disk drive system. If you own a single disk drive system, the COPY program will ask you to make the necessary diskette changes.

Loading the Program

1. Insert the Instrument Maker startup diskette into drive A.
2. Turn on the computer (if the computer is already on, simultaneously press the Ctrl, Alt and Del keys to reset it).
   Instrument Maker will be automatically loaded.

   OR, to load Instrument Maker without resetting,

   Select drive A by typing:

   A:
3. Load the program by typing:

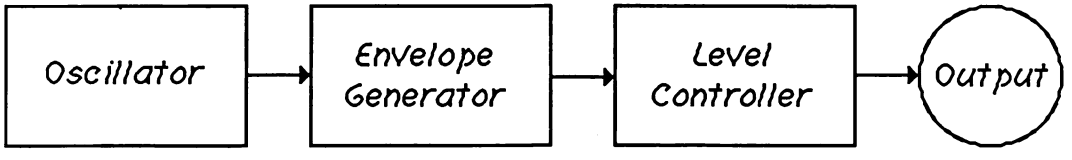
   A>**INSMAKER**

Description of the Synthesizer

This section provides a brief description of the basic principles of sound synthesis and the different parameters which make up a sound. This will give you a better understanding of the way the synthesizer can produce a wide variety of sounds. This information will also be useful in creating and modifying your own sounds.

A Fundamental Part of the Synthesizer: the Operator

Like most synthesizers, the Ad Lib Synthesizer is made up of oscillators and envelope generators. Here, an oscillator and a generator are linked with a level controller to form what we call an "operator". The operator is therefore a fundamental part of the Ad Lib Music Synthesizer Card.



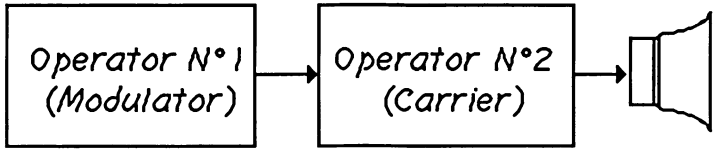
Components of an Operator

The Methods of Synthesis

The Ad Lib Music Synthesizer Card generates sounds by using one of the two following methods:

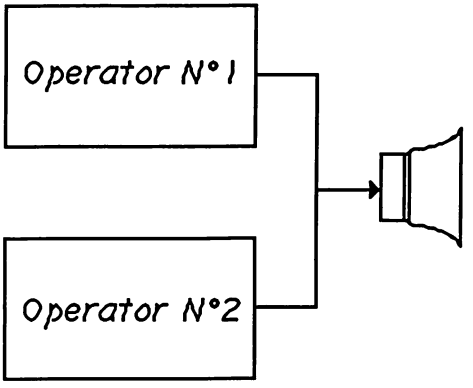
- Frequency Modulation Synthesis
- Additive Synthesis

In frequency modulation synthesis, the output of an operator is used to modify the frequency of a second operator. The two operators, therefore, have different functions: the one that modifies is called a "Modulator" and the one that is modified, a "Carrier". It is by this method of synthesis that two operators can produce complex, resonant sounds.



Frequency Modulation Synthesis

In additive synthesis, the outputs of the two operators are combined: one of these operators produces the fundamental of the desired frequency; the other produces what we call a "harmonic", which is an exact multiple of the fundamental. It is the addition of these two outputs that produces the desired sound.



Additive Synthesis

The Ad Lib Music Synthesizer Card serves mainly to perform frequency modulation synthesis. Additive synthesis, only having two operators, is by far less efficient and produces mostly "organ-like" sounds. Therefore, you will almost always be using frequency modulation synthesis.

The Types of Sounds

The Ad Lib Music Synthesizer Card is composed of 18 operators which are grouped into pairs in order to produce up to 9 melodic simultaneous sounds when used with Visual Composer.

The synthesizer can also produce the following five percussion instruments: Bass Drum, Snare Drum, Tom-Tom, Cymbal and Hi-Hat. The sound of the Bass Drum requires 2 operators, whereas the four others only need one. Consequently, when using Visual Composer, you can obtain another assortment of sounds:

- 6 melodic instruments (12 operators)
- 1 Bass Drum (2 operators)
- 1 Snare Drum (1 operator)
- 1 Tom-Tom (1 operator)
- 1 Cymbal (1 operator)
- 1 Hi-Hat (1 operator)

The Parameters

With Instrument Maker, the timbre of a sound is determined by the parameters of the three components of the operators. There are therefore three parameter categories:

- Envelope generator parameters
- Oscillator parameters
- Level controller parameters

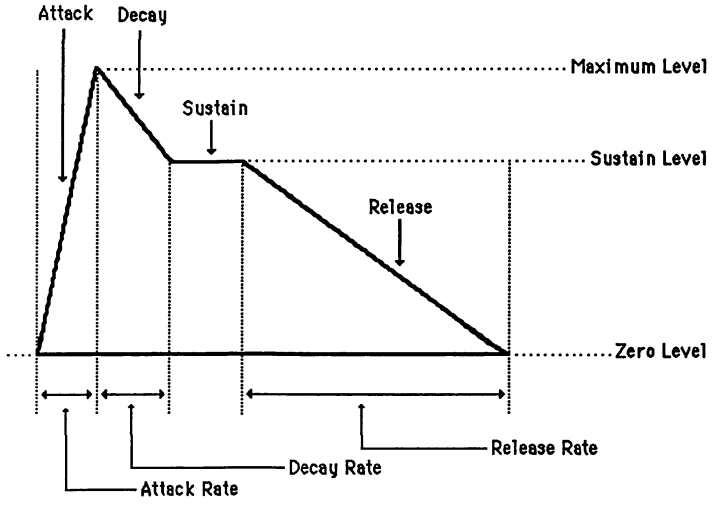
Envelope Generator Parameters

In the duration of a sound, the volume varies in accordance with each instrument's distinctive curve. This curve is called the "volume envelope", and it is by the Carrier operator that it can be modified.

Furthermore, the timbre of most of the sounds changes from the moment where the note is played to the moment where it decays according to the instrument's distinctive curve. This curve is called the "timbre envelope" and it is by the Modulator operator that it can be modified.

The envelope produced by an operator can be modified by changing the value of the various parameters.

- **Attack Rate**
  All envelopes start at level zero and work their way towards a maximum level at a speed determined by the *Attack Rate*. The envelope can reach the maximum level instantaneously or after a short delay, depending on the value given to this parameter.



An Envelope

- **Decay Rate**
  After having reached the maximum level, the envelope moves towards the *Sustain Level* at a speed determined by the *Decay Rate*.

- **Sustain Level**
  Once the envelope has reached the maximum level, it immediately begins diminishing towards the *Sustain Level.* The *Sustain level* can be either equal to or lower than the maximum level depending on the value that you have chosen for this parameter.

  The envelope will remain on the *Sustain Level* only if the *Sustaining Sound* is in effect; if it is not in effect, the envelope will immediately start releasing and the sound will be in that case a short one. (See the description of the *Sustaining Sound* parameter below.)

- **Release Rate**
  After having reached the sustain level, the envelope starts heading towards level zero at a speed determined by the *Release Rate .*

The envelope generator also enables the modification of the two following parameters:

- **Sustaining Sound**
  The *Sustaining Sound* parameter enables you to obtain a sound which is kept at the *Sustain Level* for as long as the note is held. With this parameter, the sound release occurs the moment the note is released.

- **Envelope Scaling**
  With several musical instruments, the sound envelope differs according to the pitch of the note. For example, a high note on a piano is noticeably shorter than a low note. Instrument Maker will automatically reproduce this phenomenon when the *Envelope Scaling* is in effect.

Oscillator Parameters

- **Frequency Multiplier**
  The *Frequency Multiplier* enables you to modify the oscillator frequency so that the sound played becomes a multiple of the depressed note's frequency. The harmonics renders the sound more "intricate".

- **Pitch Vibrato**
  The *Pitch Vibrato* automatically brings about a slight fluctuation to the oscillator frequency.

- **Modulation Feedback**
  The oscillator used in the modulator can itself be modulated by feeding back the output signal into the input. The *Modulation Feedback* enables you to adjust the modulation of this oscillator.

Level Controller Parameters

The following parameters deal with the overall output levels of each operator.

- **Output Level**
  The *Output Level* enables you to adjust an operator's maximal output level. When the two operators are used in frequency modulation, the modulator output level determines the modulation of the carrier; the carrier's output level changes the overall volume of a sound.

- **Level Scaling**
  The sound level and timbre of acoustic instruments varies according to the pitch of the note. For example, the lower notes of a piano sound louder than the higher notes. *Level Scaling* allows you to reproduce this phenomenon; increasing the value given to this parameter decreases the loudness of the higher notes.

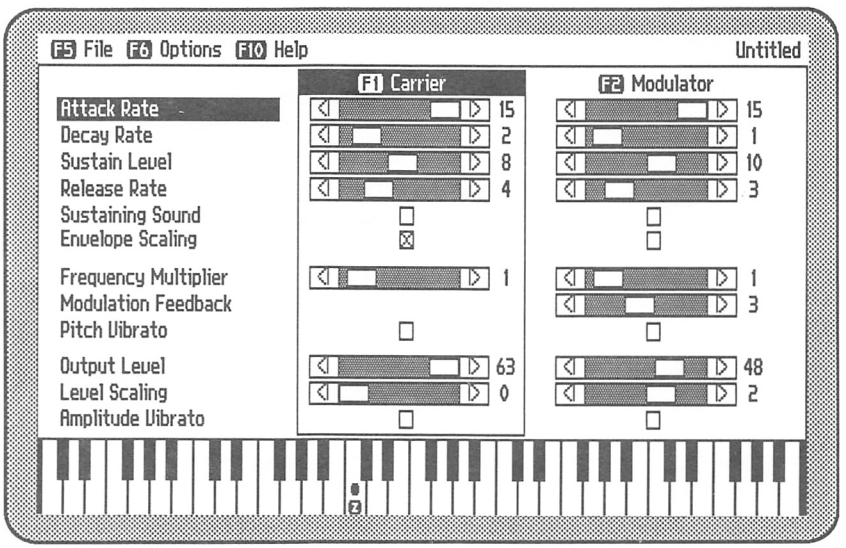
- **Amplitude Vibrato**
  The *Amplitude Vibrato* automatically brings about a slight fluctuation to an operator's output level.

Using Instrument Maker

The Screen Display

Instrument Maker's screen is divided into three parts:

- The menu bar at the top of the screen.
- The parameter control panel in the center of the screen.
- The piano keyboard at the bottom of the screen.

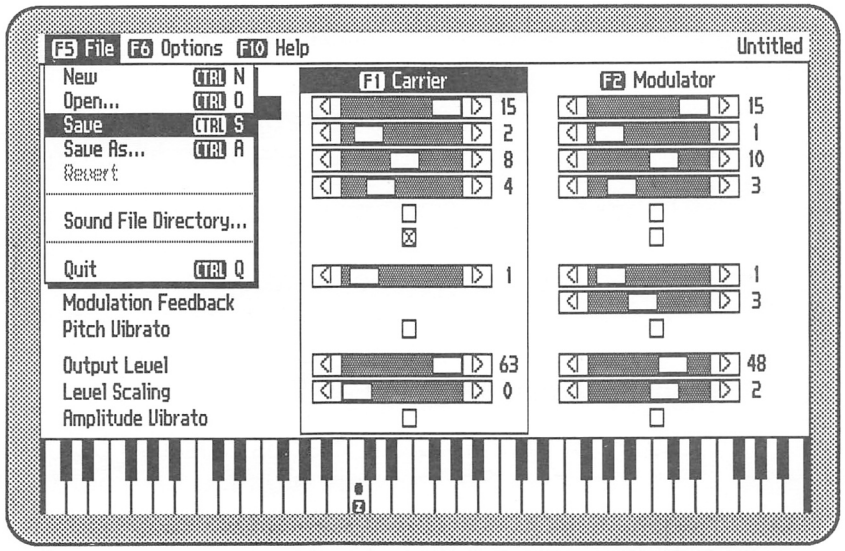


The Menu Bar Commands

Most of the Instrument Maker's commands are grouped by menus according to category, so that they can be easily located. The menu bar contains the titles of these menus. The keys which open each menu are indicated at the left of each title. At the right-hand side of the menu bar, the name of the opened file is indicated (when a new file is opened, the name "Untitled" is seen here).

Opening and Closing Menus

1. Press the function key named to the left of the desired menu.
   The title becomes highlighted, and the menu containing the commands is displayed on the screen. Commands that are inaccessible at this time are dimmed.
2. Press the Esc key.
   The menu closes.



Choosing a Command from an Open Menu

1. Press one of the vertical arrow keys.(↓, ↑).

   OR

   Press the key which corresponds to the first letter of the command.
   The command you have chosen is highlighted.

NOTE: When more than one command begins with the same letter, Visual Composer begins by highlighting the first one. If you press the same key again, the next command starting with this letter becomes highlighted.

2. Press the ↵ key.
   Your choice is confirmed and the command you have chosen is carried out.

Certain menu commands appear with a check mark beside them to indicate that they are already activated.

Other menu commands are followed by an ellipsis (...). These commands need additional information to be carried out. When you choose one, a dialogue box appears on the screen. You then enter the appropriate information and press the ↵ key to confirm your instructions. If you wish to cancel these instructions, press the Esc key.

Many of the menu commands can also be carried out by shortcuts– a key sequence on the keyboard. Open the different menus to see these key sequences; they are shown to the right of the commands.

The Parameter Control Panel

The control panel occupies the major portion of the screen. In this panel there are two columns of slide controls and check boxes which are used to adjust the parameter values of the two operators. The creation of a sound originates from these two operators, each having a certain number of modifiable parameters.

To set a parameter, you must first of all activate the operator in which this parameter is found, then activate the parameter itself. The frame surrounding one or the other of these columns indicates which of the two operators is active; an indicator highlights the name of the active parameter.

Activating an Operator

- Press either the F1 or F2 key.
  The name of the operator is highlighted; the slide controls and check boxes under this name are surrounded by a frame.

Activating a Parameter

- Press one of the vertical arrow keys to choose a parameter.
  The chosen parameter is highlighted.

Modifying the Value of a Parameter

There are 2 types of parameters.

Certain parameters can only have two values; they are represented by a check box. When the parameter is in effect, a cross will be seen in this check box; when the parameter is not in effect, this check box will be empty. To operate these types of parameters, press the space bar on the keyboard.

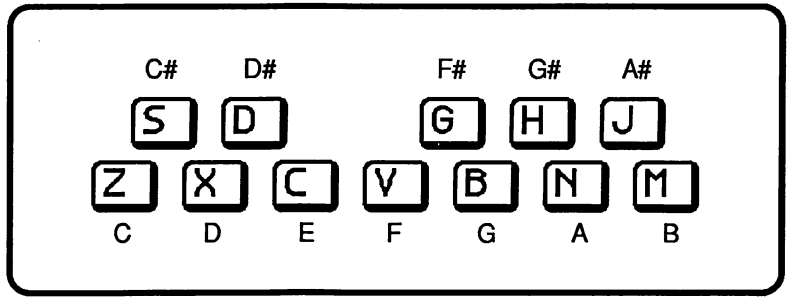
Other parameters can have several different values; they are represented by slide controls. The value which you give to this type of parameter is indicated by a number situated on the right-hand side of each slide control. To modify these parameters, press one of the horizontal arrow keys on the keyboard; the value increases or decreases by one unit depending on whether you press the right or left arrow key.

To increase or decrease the value by several units at a time, press and hold down the Ctrl key, then press one of the horizontal arrow keys.

The Piano Keyboard

The piano keyboard shows 60 of the 96 notes that the synthesizer can play. This keyboard lets you hear the sound you are creating and is represented by certain keys on the computer keyboard.

The symbol • which is placed on one of the keyboard notes, shows the position of "middle C" on the piano. The symbol "z", corresponding initially to middle C, represents the note which is played when you press the Z key on the computer keyboard. You will hear the other notes of this same octave by pressing the following keys on the computer keyboard.



To gain access to the other octaves, use the commands "Transpose Keyboard Down" and "Transpose Keyboard Up" in the Options menu. The position of the "z" symbol will change accordingly.

When you press a key to hear a sound, the duration of this sound is determined arbitrarily. If you hold the ⇧ key down before pressing one of the note keys, the sound is held for as long as these keys are held down.

Creating a Sound: A Step-By-Step Example

In this section you will see, step by step, how to create the sound of a trumpet. It is a simple example that will help you to understand the process of sound creation with Instrument Maker.

Loading the Program

1. Insert the program diskette into drive A.
2. Type "INSMAKER", then press the ↵ key.
   Instrument Maker is loaded and its parameter control panel displays the parameter values corresponding to those of a "piano".

Each time you open a new file with Instrument Maker, the parameters for the sound of a piano always appear on the screen. We are going to modify these parameters to gradually transform the sound. By carefully following the example described below, you will create the sound of a trumpet. Before starting, listen to the piano sound already programmed.

Listening to the Sound

- Press the [Z] key on the computer keyboard.
  You hear a C. The other notes of the scale can be played with the keys on the bottom row, either [X], [C], [V], [B], [N] or [M] on the keyboard.

The sound of the piano that you hear is relatively short in comparison to that of a trumpet. We are therefore going to prolong this sound so that it resembles a little closer the sound of a trumpet. As we saw earlier, it is the Sustaining Sound parameter that modifies the duration of a sound.

Prolonging the Sound

1. Press the [F1] key to choose the Carrier operator.
2. Press the [↓] key until the *Sustaining Sound* parameter is highlighted.
3. Press the space bar to put the Carrier's *Sustaining Sound* parameter into effect.
   A cross is displayed in the check box to indicate that this parameter is now in effect.

4. Press the [F2] key to choose the Modulator operator.
5. Press the space bar to put the Modulator's *Sustaining Sound* parameter into effect.
   A cross is displayed in the check box to indicate that this parameter is now in effect.

Listen to the result of this modification: the sound is now prolonged. If you hold down the [⇧] key and press the [Z] key, the sound will be heard for as long as the [⇧] key is held down.

The sound, however, is still far from being one of a trumpet. First of all, you will notice that the volume of this new sound is too low; we will turn up the volume by modifying the Carrier's *Sustain Level*. As we saw earlier, this operator is responsible for the volume envelope.

Turning Up the Volume

1. Press the [F1] key to select the Carrier operator.
2. Press the [↑] key until the *Sustain Level* is highlighted.
3. Press the [→] key until the *Sustain Level* reaches a value of 12.

Listen to the effect of this modification: the volume is now louder. However, you will notice that the timbre fluctuates for a certain time before stabilizing. This phenomenon is caused by a decay in the timbre envelope; the *Sustain Level* of the Modulator does not correspond to that of the Carrier we just modified. Because the Modulator is responsible for the timbre we will eliminate this fluctuation in the timbre by placing the Modulator's *Sustain Level* at it's maximum value.

Removing Timbre Fluctuation

1. Press the F2 key to select the Modulator operator.
2. Press the → key until the Sustain Level is at its maximum value (15).

Listen to the effect of this modification: the sound fluctuation has disappeared. You now hear a steady sound.

A note played on a trumpet has a distinctive effect at the time of the attack. We will try to recreate this effect by adjusting the *Attack Rate* of both operators.

Modifying Sound Attack

1. Press the F2 key to select the Modulator operator.
2. Press the ↑ key until the *Attack Rate* parameter is highlighted.
3. Press the ← key until the value given to this parameter is 4.
4. Press the F1 key to select the Carrier operator.
5. Press the ← key until the value given to this parameter is 7.

Listen to the effect of this modification: the sound that you now hear has many of the characteristics of a trumpet. However, the timbre isn't rich enough. Enrich it by modifying the value of the *Modulation Feedback.*

Enriching the Sound

1. Press the F2 key to select the Modulator operator.
2. Press the ↓ key until the *Modulation Feedback* is highlighted.
3. Press the → key until the value given to the *Modulation Feedback* is 6.

Listen to the effect of this modification: the sound is now much "richer" and "ampler". However, when you play two notes very close together, the attack of the second note is much weaker. This is because the sound release is too slow.

Standardizing the Attack

1. Press the F1 key to select the Carrier operator.
2. Press the ↑ key until the *Release Rate* parameter is highlighted.
3. Press the → key until the *Release Rate* attains its maximum value (15).
4. Press the F2 key to select the Modulator operator.
5. Press the → key until the *Release Rate* attains its maximum value.

Listen to the effect of this modification: the attack is uniform whether you play a single note or several in succession. The sound is now rich enough for a trumpet.

With a real trumpet, a sound differs according to its pitch. We will listen to the sound an octave lower to see if it still resembles the sound of a trumpet.

Listening to a Sound an Octave Lower

1. Press the [F6] key.
   The Options menu opens.
2. Press the [↓] until the command Transpose Keyboard Down is highlighted.
3. Press the [↵] to confirm your choice.
   The symbol z on the piano keyboard has moved to the left of the • symbol to indicate that the [Z] is now playing an octave lower than middle "C".

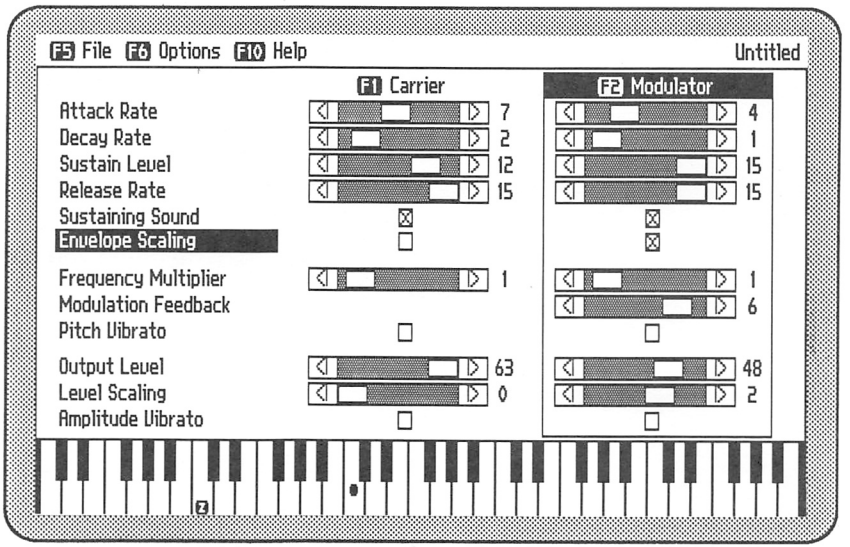
NOTE: You can try the sound at higher octaves by using the command Transpose Keyboard Up.

If you listen to the sound at different octaves, you will notice that it sounds better in some places than others. We will therefore "scale" the sound so that it reproduces the effect of a real instrument as it changes registers.

Scaling the Sound for all Registers

1. Press the F1 key to select the Carrier operator.
2. Press the ↓ until the *Envelope Scaling* parameter is highlighted.
3. Press the space bar to turn the *Envelope Scaling* off.
4. Press the F2 to select the Modulator operator.
5. Press the space bar to turn the *Envelope Scaling* on.

If you have followed the instructions step by step, your parameter control panel should display the following parameter values:



Listen once again to the sound at different octaves: it now reacts exactly like a wind instrument. Between the high and low notes, there is a difference in timbre but not in volume. All these parameter modifications have transformed the "piano sound" into a "trumpet sound".

You now know how to program a sound with Instrument Maker. The best way to go about creating a sound of your own would be to pick a preset sound which resembles it the most, and then modify it to your own liking. Before going any further, it would be advisable to save the sound of the trumpet you just created so as not to risk loosing it.

Saving the New Sound

1. Press the [F5] key.
   The File menu opens.
2. Press the [↓] key until the Save command is highlighted.
3. Press the [↵] key to confirm your choice.
   A dialogue box appears and asks you under what name you would like to save this sound. The name you choose will become the title of the opened file.

4. Type the name of the instrument, for example, "MYSOUND".
   This name will be written in the dialogue box.

NOTE: Not all characters are accessible for use in a file title. If you happen to use an unauthorized character, a warning signal will let you know. On page 44, you will see which characters are available when choosing a name.

5. Press the [↵] key to confirm the command.
   Your sound is now saved as a file, the name of which appears on the right-hand side of the menu bar.

Continue to modify the values given to the different parameters and listen to the produced effects. When you open a different file, Instrument Maker will close the one you're working on and ask you if you desire to save the most recent modifications. You can, at anytime, find this file inside the directory where it was saved by using the Open command.

Getting Back to a File

1. Press the [F5] key.
   The file menu opens.
2. Press the [↓] key until the Open command is highlighted.

3. Press the ↵ key to confirm your choice.
   A list of the files stored in the directory appears on the screen.

4. Press the ↓ key until the name of the desired file is highlighted.

5. Press the ↵ key to confirm your selection.
   The parameter control panel displays the values corresponding to the sound stored in this file. The name of this file appears on the right-hand side of the menu bar.

Take the time to explore the effects of different parameter values, create new instrumental sounds and save them ready to be used in your musical compositions with Visual Composer.

Using a New Sound with Visual Composer

Visual Composer is provided with a directory of sounds which is already quite large. But it would be also useful to integrate the sounds that you have created with Instrument Maker into your compositions. Here is how to introduce a copy of these sounds into Visual Composer.

NOTE: Consult Appendix A (page 49) to see the list and description of the sounds included with the program.

1. Quit Instrument Maker by using the command Quit in the File menu.
2. Make sure that the Instrument Maker diskette is in drive A.
3. Insert the Visual Composer diskette into drive B.
4. Type the following message in the DOS to copy an instrument named "MYSOUND" onto the Visual Composer diskette, in drive B.

   A>**COPY MYSOUND.INS B:**

Now that you have changed the sound of a piano to the sound of a trumpet, you are familiar with the procedure of sound creation with Instrument Maker.

References

This section describes one by one the commands found in the menus.

The menu bar displays the titles of the different menus provided by Instrument Maker : File, Options, Help. To open any of these menus, all you have to do is press the appropriate function key. You can close a menu by using the [Esc] key.

The File Menu

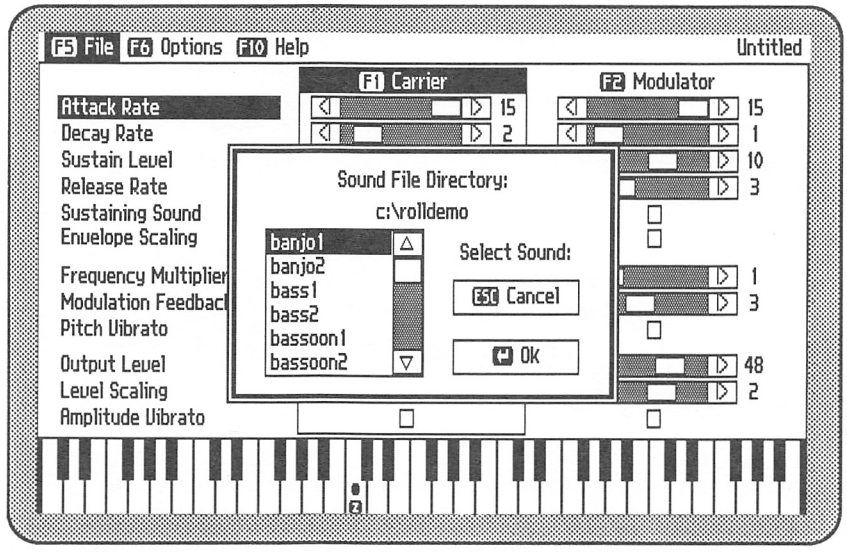
The File menu contains all the commands relating to files. To open this menu, press the [F5] key. The menu listing all its commands is then displayed on the screen.

New

When creating a new sound, it is best to work starting from a sound already programmed. The command New opens an untitled file which already contains the parameters for a piano; the chosen synthesis process is Frequency Modulation. Starting from this sound, you can program a new sound. When you choose New, the open file displayed on the screen is closed to make room for the new one. Instrument Maker takes the precaution, however, of first asking you if you wish to save the latest changes made.

Open...

This command opens a file in the active directory. When you choose the command Open, a dialogue box appears on the screen listing all the Instrument Maker files in this directory.



To choose a file from this list, press the vertical arrow keys (↓ or ↑). When the indicator comes to the desired file, press the ↵ key to confirm your choice. If the list has too many file names to fit in the dialogue box, you can scroll to the file of your choice using the ↓ or ↑ key.

You can also press the alphabetic key corresponding to the first letter of the file name: the indicator will move right to it. If there is more than one command which starts with the same letter, press the ↵ key.

When you choose Open..., the open file displayed on the screen is closed to make room for the new one; Instrument Maker takes the precaution, however, of first asking you if you wish to save the latest changes made.

Save

This command saves the open file in the current directory. If this file has already been named, it will be saved automatically. If, however, it is a new file, a dialogue box will appear so that you can name this file.

NOTE: Refer to the following paragraph (Save As. . .) for the rules which apply to naming of files.

Save As...

The Save As... command is used to save the open file under a new name. If the name you choose has already been used for an existing file in the current directory, a dialogue box asks you if you wish to replace the old one.

When choosing a name for a file, you must adhere to the following rules:

- the name must have from 1 to 8 characters;
- these characters are to be chosen from the capital and small letters of the alphabet and from the digits 0 to 9;
- letters and numbers can be combined.

Revert

This command cancels the modifications you are making to a file. It reverts the file back to what it was the last time you saved.

When you ask Instrument Maker to revert a file it will always ask you for a confirmation of this command.

Instrument File Directory...

This command links the program to a new instrument file directory. This makes it possible to use and save sounds in a different directory than the one to which the program was first linked. Enter the name of the directory desired in the dialogue box which appears, abiding by the DOS conventions. Finally, press the ↵ key to confirm your choice. From now on, the file list which appears with the command Open contains the files belonging to this new directory.

In other words, a directory name takes the following form:

<Drive:> \ <Directory name> ↵

Example: to gain access to a sound file placed in the directory named SOUND in drive B, type:

B:\SOUND ↵

If you wish to have more details concerning the DOS conventions, consult your DOS manual.

Quit

This command is used to end an Instrument Maker session and return to DOS. If you have made changes since last saving the file, a dialogue box appears and gives you the opportunity to save these changes before quitting.

The Options Menu

To open this menu, press the F6 key: the list of commands contained in this menu appears on the screen.

Transpose Keyboard Up

This command makes the computer keyboard play an octave higher.

Transpose Keyboard Down

This command makes the computer keyboard play an octave lower.

Additive Synthesis

The command Additive Synthesis enables you to change the synthesis process being used. If the name of this command is checked off in the menu, additive synthesis is in effect. If it is not checked off, Frequency Modulation Synthesis is in effect.

Melodic Mode

This command puts Instrument Maker into Melodic Mode which enables you to create sounds to be used in any of Visual Composer's melodic voices.

Bass Drum Mode

This command puts Instrument Maker into Bass Drum Mode which enables you to create sounds to be used in the Bass Drum voice (BD) of Ad Lib Visual Composer.

Snare Drum Mode

This command puts Instrument Maker into Snare Drum Mode which enables you to create sounds to be used in the Snare Drum voice (SD) of Ad Lib Visual Composer.

Tom-Tom Mode

This command puts Instrument Maker into Tom-Tom Mode which enables you to create sounds to be used in the Tom-Tom voice (TO) of Ad Lib Visual Composer.

Cymbal Mode

This command puts Instument Maker into Cymbal Mode which enables you to create sounds to be used in the Cymbal voice (CY) of Ad Lib Visual Composer.

Hi-Hat Mode

This command puts Instrument Maker into Hi-Hat Mode which enables you to create sounds to be used in the Hi-Hat voice (HH) of Ad Lib Visual Composer.

MIDI Input

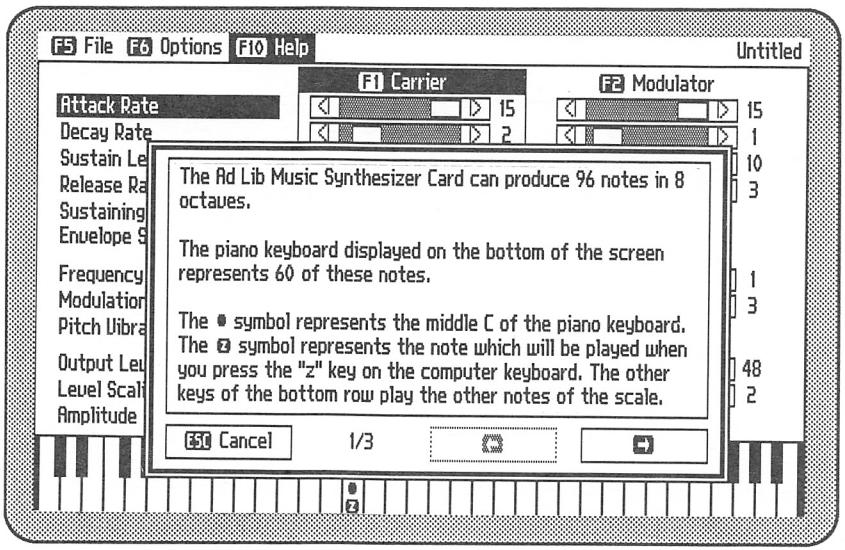
This command becomes accessible when Instrument Maker detects the presence of a MIDI driver (see Appendix C, page 59). When you choose this command, it appears with a check mark beside it; from then on, all notes played on the MIDI keyboard are heard through Instrument Maker and the Ad Lib Synthesizer Card. The MIDI input command is activated and de-activated alternately by choosing it.

The Help Menu

The Help menu gives you access to a summarized program guide.

When you press the F10 key, a list of topics appears on the screen. When you choose one of them, a window containing information pertinent to this topic opens.

The arrows located at the bottom of this window indicate which keys are used to see the other pages of this document. To close this window, press the Escape key.



Appendix A
List of Preset Sounds

ACCORDN	Accordion: rich, clear tone. Best register: from one octave below to four octaves above middle C.
BANJO1	Banjo: excellent for short notes in quick succession; sounds best from one octave lower to three octaves higher than middle C.
BASS1	Double bass: weak volume; inaudible when notes are very low. Best register: the two octaves below middle C.
BASS2	Electric bass: smooth; best when used in second and third octaves below middle C.
BASSOON1	Bassoon: sounds an octave lower than written. Best register: from one and a third octaves below to two octaves above middle C.
BDRUM1	Bass drum: hammering; sounds best in the second octave below middle C.
BELLS	Chiming bells: brilliant and resonnant; sound best between the first octave below to the three octaves above middle C.
BRASS1	Brass ensemble: "brassy"; sounds best from two octaves below to two octaves above middle C.
CBASSOON	Contrabassoon: deep, grand-sounding tone; sounds an octave lower than written; cannot be played quickly. Best register: two and a half octaves below middle C.

CELESTA	Celesta: instrument made with small metal plates; delicate sound like a music box; sounds two octaves higher than written. Best register: from two octaves below to two octaves above middle C.
CLAR1	Clarinet: best when used one octave below and two to three octaves above middle C.
CLAR2	Bass clarinet: slow attack; sounds an octave lower than written. Best register: one octave lower and two octaves higher than middle C.
CROMORNE	Cromorne: wind instrument used in Renaissance Period; very accentuated reedy sound. Best register: from one octave below to two octaves above middle C.
CYMBAL1	Cymbal: medium-crash (high pitched), played with drumstick.
ELCLAV1	Electric keyboard: clear penetrating tone; sounds best from two octaves below to two octaves above middle C.
ELGUIT1	Electric rock guitar: distorted (fuzz pedal effect). Best register: from one octave below to two octaves above middle C.
ELGUIT2	Electric jazz guitar: soft; slightly metallic; sounds best from two octaves below to three octaves above middle C.
ELGUIT3	Electric guitar: complex timbre, similar to an intermodulation effect; sounds an octave higher than written. Best register: from two and a half octaves below to two octaves above middle C.
ELPIANO1	Piano: like a standard electric piano; short release; excellent in quick passages; sounds best between three octaves below and four octaves above middle C.

ELPIANO2	Piano: "brassy" electric piano; sustained sound; sounds an octave higher than written. Best register: from the four octaves below to the four octaves above middle C.
FLUTE	Flute: soft sound; additive synthesis; sounds best in the four octaves above middle C.
FLUTE1	Flute: soft muffled sound; sounds best in the four octaves above middle C.
FLUTE2	Flute: like flute sound on an electric organ; sounds best in the four octaves above middle C.
HARPSI 1	Harpsichord: delicate twangy sound; sounds an octave higher than written. Best register: from three octaves below to three octaves above middle C.
HARPSI 2	Harpsichord: full accentuated sound; sounds best from two octaves below to two octaves above middle C.
HARPSI 3	Harpsichord: appropriate timbre for low register; sounds best in the three octaves below middle C.
HIHAT1	Hi-Hat: closed double cymbals played with drumstick; metallic resonant sound.
HIHAT2	Hi-hat: closed double cymbals played with drumstick; short yet soft sound.
JAVAICAN	Sounds like oriental string/percussion instrument; slightly indistinct attack. Best register: from one octave below to two octaves above middle C.
JEWSHARP	Jews' harp: produces a funny twangy sound. Use in the first octave above middle C.

LASER	Electronic sound effect: mysterious, complex sound; evokes feeling of futuristic science fiction; should only be used in Cymbal Mode. (The sound and pitch do not change according to the note or the register.)
LOGDRUM1	African percussion instrument; dry yet hollow sound. Best register: from one octave below to four octaves above middle C.
MARIMBA1	Marimba: wooden bars played with medium-hard mallets; sounds best from one octave below to four octaves above middle C.
MARIMBA2	Marimba: wooden bars played with hard mallets; resonant and slightly metallic. Best register: same as Marimba1.
OBOE1	Oboe: sounds best in the two and a half octaves above middle C.
ORGAN1	Electric organ: bright sound; sounds best from one and a half octaves below to three octaves above middle C.
ORGAN2	Electric organ: velvety; additive synthesis; sounds best from two octaves below to two octaves above middle C.
ORGAN3	Organ: standard electric organ sound. Best register: from three octaves below to four octaves above middle C.
PIANO1	Piano: sounds best from three octaves below to four octaves above middle C.
PIANO2	Resonant piano: pedal effect; sustained; same register as Piano1. (Everything played lower than the first octave below middle C sounds like a resonant electric bass.)

SAX1	Saxophone: sounds best from two octaves below to two octaves above middle C.
SITAR1	Indian Sitar: rich and resonant; sounds best from one octave below to two and a half octaves above middle C.
SNAKEFL	"Snake Flute": timbre of an oriental reed instrument; piercing twangy sound; reminds one of snake charmers. Best register: from one half to one octave below to three octaves above middle C.
SNARE1	Snare drum: snappy; high pitched.
SYN1	Synthesizer: slow attack; sonorous. Best register: the three octaves either side of middle C.
SYN2	Synthesizer: short, staccato, artificial sound of plucked strings; sounds best from two octaves below to four octaves above middle C.
SYN3	Synthesizer: resonant; short attack. Best register: from three octaves below to four octaves above middle C. (When used in the second and third octaves below middle C, a rich and powerful bass sound is produced.)
SYN4	Synthesizer: twangy brass sound; sounds best in the two octaves below and four octaves above middle C.
SYN5	Synthesizer: very piercing sound; lots of high harmonics. Best register: from two octaves below to two octaves above middle C.

SYN9	Synthesizer: metallic sound like the stroke of a bell-clock; small, "bathtub"-like resonance; sounds best in the three octaves below and first one and a half octaves above middle C.
SYNBASS1	Synthesizer: buzzing distorted bass; sounds an octave lower than written. Best register: the two octaves below middle C. (Also interesting above middle C.)
SYNBASS2	Synthesizer: "wasp" sound (weird); slow attack; sounds best when used from the two octaves below to one octave above middle C.
SYNBASS4	Synthesizer: buzzing sound, as of insects; rather short and aspirated sound. Best register: from the two octaves below to the two octaves above middle C.
TINCAN1	Percussion effect: dry, metallic sounds, varying from note to note; indeterminate pitch; use above middle C.
TOM1	Tom-tom: smooth; sounds best the third octave and half of the fourth octave below middle C.
TOM2	Tom-tom: muffled, reminding one of real skin drums, such as congas. Best register: the two octaves below middle C.
TROMB1	Trombone: "brassy"; sounds best when used from the two octaves below to one octave above middle C.
TROMB2	Trombone: velvety; same register as Tromb1.
TRUMPET1	Trumpet: very sonorous (striking); sounds best from one octave below to three octaves above middle C.
TRUMPET2	Trumpet: soft; slow attack (wah-wah mute effect); same register as Trumpet1.

TRUMPET3	Trumpet: very resonant; twangy; excellent for quick passages; same register as Trumpet1.
TRUMPET4	Trumpet: smooth; same register as Trumpet1.
TUBA1	Tuba: with characteristic slow attack; sounds best when used in the two and a half octaves below middle C.
VIBRA1	Vibraphone: metal bars played with medium mallets; vibrato; sounds an octave lower than written. Best register: four octaves above middle C.
VIOLIN1	Violin: strings played with bow; rich sound; best when used in the four octaves above middle C.
VIOLIN2	Electric violin: noisy sonority, with light vibrato; same register as Violin1.
VLNPIZZ1	Violin: strings played pizzicato (very short plucked sound); volume weak. Best register: from one octave below to three octaves above middle C.
WAVE	Unusual instrument: ethereal, flute-like sound; long smooth attack; sounds two octaves higher than written; sounds best when played from the three octaves below to the three octaves above middle C.
XYLO1	Xylophone: narrow wooden bars played with medium mallets; sound very dry and dampened. Best register: the second, third and fourth octaves above middle C.
XYLO2	Xylophone: narrow wooden bars played with medium-hard mallets; sound very dry and dampened; brighter sound than Xylo1. Best register: the four octaves above middle C.

Appendix B
Error Messages

- **Directory "XXX" not found.**
  There is no directory corresponding to this name. Make sure that the name conforms with the DOS convention.

- **Disk drive is not ready, re-insert diskette, close door and try again.**
  The program cannot gain access to the disk drive. Make sure that the diskette is properly inserted into the disk drive and that the door is closed, then try again.

- **Diskette is write-protected, remove protection and try again.**
  No information can be added to the diskette because it is write-protected. Remove the protection and try again.

- **Error while reading or writing, diskette may be unusable.**
  The program cannot gain access to the contents of the diskette. By using the **COPY** command in the DOS, copy the contents of the diskette onto a blank diskette and try again.

- **Error while writing file, insufficient disk space.**
  There isn't enough space on the diskette to write the data. This message could also appear if the maximal number of files on a diskette is attained.

- **File "XXX" not found.**
  The program cannot find the specified file. This is probably because the music file diskette was removed after the OPEN command had been executed. To correct, re-insert the music file diskette.

- **Resource file not found.**
  The program cannot function because the file INSMAK1.RSR is not in the current directory.

- **Sound driver is not installed.**
  The program cannot function because the sound driver has not been loaded. Load the sound driver and try again. (This should not happen if you use the normal loading procedure.)

Appendix C
Using a MIDI Keyboard

If your computer is equipped with a Roland DG MIDI Processing Unit MPU-401, or any compatible, you may use a MIDI keyboard to hear the sounds of the Ad Lib Synthesizer Card.

In order to do so, simply load the MIDI driver provided on the diskette into memory by writing the following command at the DOS prompt:

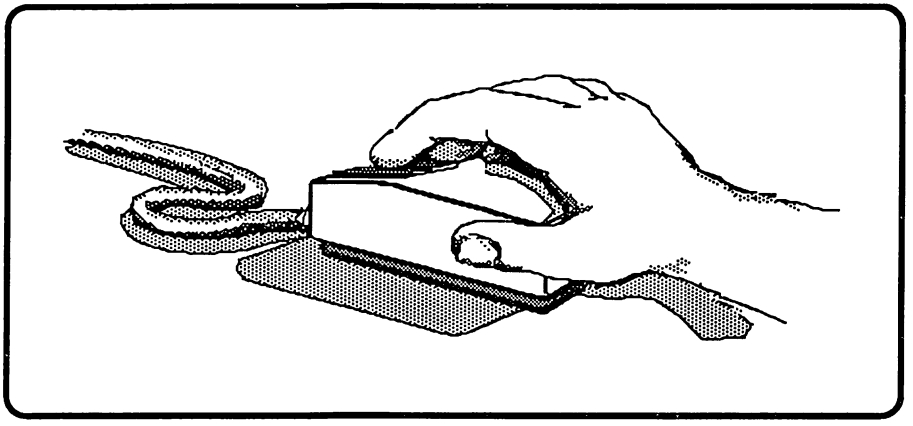
A>**MPU401**

When the MIDI Input command from the Options menu is activated (see page 47), the connected MIDI keyboard serves to play the sound you are making with Instrument Maker.

When Instrument Maker is put into the Melodic Mode of sound editing, up to nine sounds can be played simultaneously on the keyboard. When Instrument Maker is put into one of the percussion modes of sound editing, only one sound can be played on the keyboard at a time.

Appendix D
Using a Mouse

This appendix explains how to use Instrument Maker with a mouse - which we take for granted you know how to operate.



Loading Instrument Maker

- When you wish to use your mouse.

  Instrument Maker automatically detects and utilizes a mouse driver if one is loaded. Load your mouse driver according to the manual that comes with the mouse. Next, load Instrument Maker in the usual fashion. The program is compatible with mouses by Microsoft (and all related drivers) and Mouse Systems PC Mouse.

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

- When you DON'T wish to use your mouse.

  Load the program with the option "/-m". This option prevents the automatic utilization of the mouse driver. At the DOS, type:

  A>**INSMAKER /-M**

The Distinctive Characteristics

The characteristics of Instrument Maker with a mouse occur in the following 2 operations:

1. Choosing an element
2. Changing the value of the parameters

Choosing an element in a list

- A command in a menu

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

- A file in a list

  Click and drag to the name 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.

- A button inside a window

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

Changing the Value of the Parameters

- With a slide-control

  Click on one of the horizontal arrow keys: the value of the parameter will progressively go up or down. You may also click on the grey zone of the slide-control, or drag the "control knob" to change the value more rapidly.

- With a check box

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

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