MSX

YAMAHA

YRM-501

FM MUSIC COMPOSER II
OWNER'S MANUAL

COMPOSITEUR DE MUSIQUE FM II
MANUEL D'UTILISATION

FM MUSIC COMPOSER II
BEDIENUNGSANLEITUNG

NIPPON GAKKI CO., LTD.
PRINTED IN JAPAN

INTRODUCTION

Congratulations on your purchase of the Yamaha FM Music Composer II .
In order to appreciate the full performance of this program, please read this Owner's Manual carefully and completely. Keep it in a safe place for future reference.

Features

The FM Music Composer II is a ROM cartridge program that enables you to utilize your Yamaha CX5M Music Computer for computer aided music composition, orchestration, and full performance control. Here is a list of the program's main features.

- Music composition with up to 8 separate parts can be performed automatically. Different voices can be used for each separate part, and changed at any time, permitting full control over the orchestration.
- Notes can be entered from either the CX5M keyboard, a Yamaha YK-01 or YK-10/20 Music Keyboard, or from a MIDI keyboard. The external keyboard facilitates note entry, and also permits keyboard accompaniment of "automatic" performances (performances which are electronically "recorded" and "played" by the computer.)
- Notation for dynamics (crescendo, decrescendo, etc) and tempo (ritardando, atempo, etc.) can be entered from the computer keyboard, enabling a wide range of expressive control.
- The FM Music Composer II can be used for automatic performance so that compositions can be played back on Yamaha's DX synthesizers and other MIDI compatible instruments.
- The full music score, along with all performance control data, can be printed out in "hard copy" with a suitable MSX-compatible external printer and/or saved on cassette tape or floppy disk (with the SFG-05 FM Synthesizer unit).
- Mouse capability allows for easier operation.

Important Note

Most of the operations used by the new FM Music Composer II are the same as the operations used by the YRM101 FM Music Composer. Users who already own the old version of this program can find information about the new features in the Appendix.
One of the main improvements of the FM Music Composer II is its compatibility with new versions of the Yamaha Music Computer and the MSX2 Computers available in a near future. The features of the FM Music Composer II that are not available with the CX5M Music Computer are clearly indicated throughout this manual.

CONTENTS

CHAPTER I
SETTING UP YOUR SYSTEM

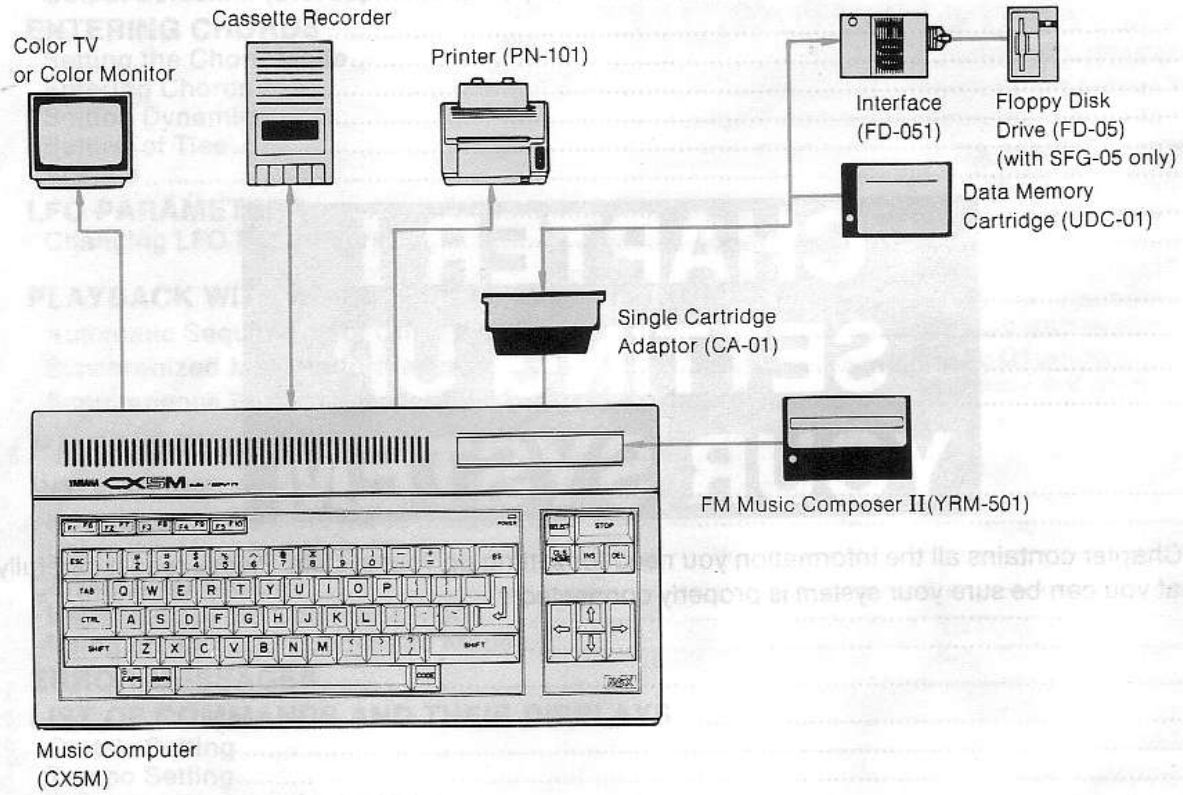
This Chapter contains all the information you need for setting up your system. Please read it carefully so that you can be sure your system is properly connected.

CENTRAL COMPUTER SYSTEM

The Music Computer

The main component of your system is the Yamaha Music Computer (CX5M). This computer is equipped with a Yamaha FM Sound Synthesizer unit. You may also use another Yamaha MSX computer and buy a seperate Yamaha FM Sound Synthesizer unit (SFG-01 or SFG-05).
The SFG-05 unit allows for operation with a disk drive; the SFG-01 does not.
The central computer system includes the Music Computer, a monitor or TV, the FM Music Composer II ROM cartridge, plus any other computer related peripherals you might find useful.

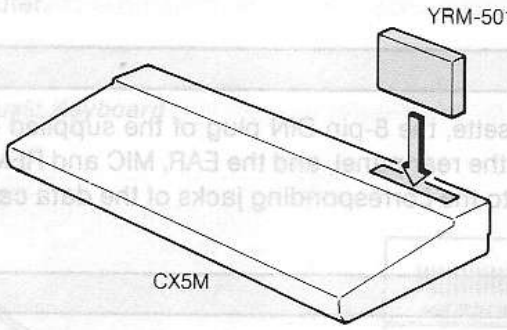
Fig. 1 Central Computer System



The FM Music Composer II ROM Cartridge

The YRM-501 FM Music Composer II cartridge is plugged into the top slot of the CX5M. You should feel the cartridge slide onto the internal connector as you press it from the top. Note that the cartridge WILL ONLY GO IN ONE WAY! If the cartridge simply stops and does not seem to seat properly when plugged in, don't force it! Try inserting it the other way around. Also, NEVER PLUG IN THE CARTRIDGE WHILE THE COMPUTER POWER IS ON!!! Always insert or remove the cartridge with the power OFF.

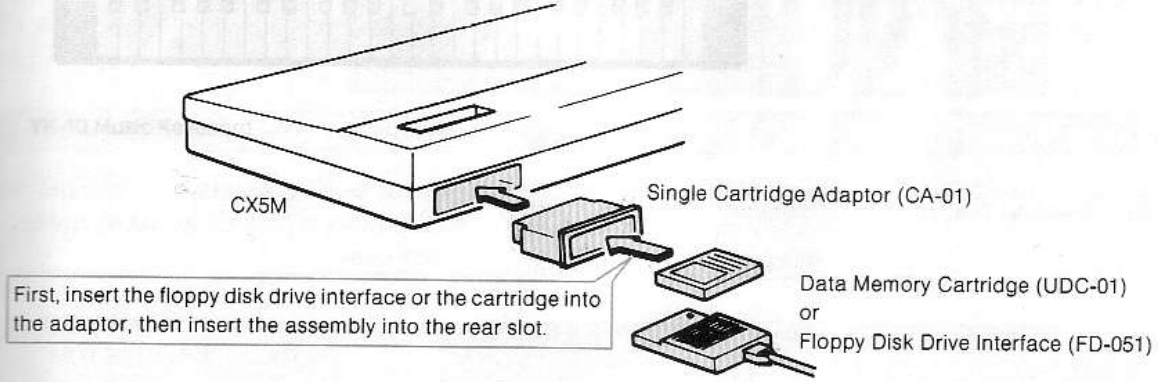
Fig. 2 Insertion of the Program Cartridge



Floppy Disk Drive or Data Memory Cartridge

A CA-01 Rear Slot Adaptor must be fitted to the rear slot following the instructions supplied with the adaptor. The FD-051 interface can then be plugged directly into the rear slot adaptor.

Fig. 3 Connection of the Floppy Disk Drive/Data Memory Cartridge



Video Display

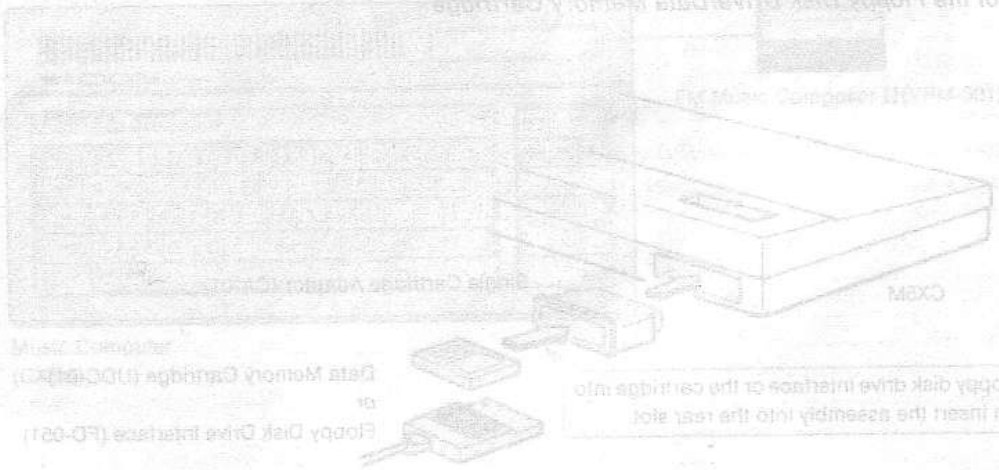
Video connections will vary according to the particular model of your computer and the type of input provided on your video monitor or TV. Refer to your computer manual for video connections.

Cassette Recorder

If you're going to store data on cassette, the 8-pin DIN plug of the supplied cassette cable must be plugged into the CASSETTE jack on the rear panel, and the EAR, MIC and REMOTE plugs at the other end of the cable must be plugged into the corresponding jacks of the data cassette recorder.

Printer

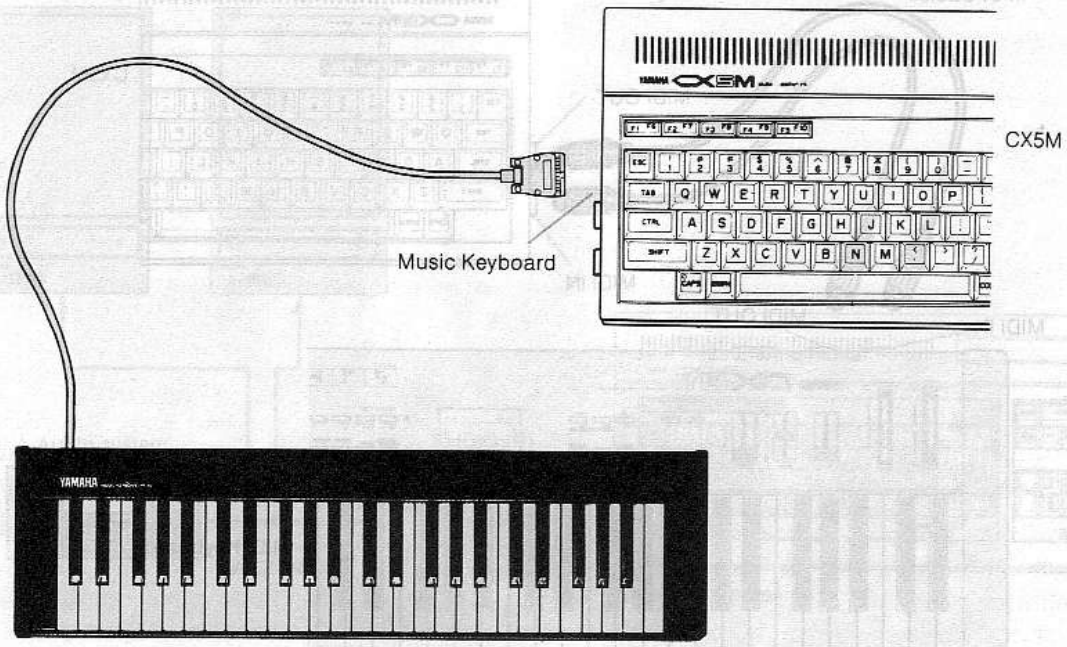
A printer is not an essential accessory for the FM Music Composer II. It can, however, be very handy for obtaining printed records of your compositions. Refer to the printer and computer manuals for connection details.



Music Keyboard

A Yamaha Music Keyboard (YK-01 or YK-10/20) makes it easy to input notes. It can also be used to play along with the FM Music Composer II. Connect it to the MUSIC KEYBOARD connector on the left side panel of the computer.

Fig. 4 Connection of a Music Keyboard



YK-10 Music Keyboard

MIDI Instruments

Instead of a Music Keyboard, a MIDI Keyboard such as a YAMAHA DX Synthesizer can be used as an input device. Automatic sequencing of the MIDI Keyboard and additional MIDI instruments is also possible, as well as synchronized performance using MIDI compatible rhythm boxes.

Fig. 5 Connection of a MIDI Keyboard for Input and Playback

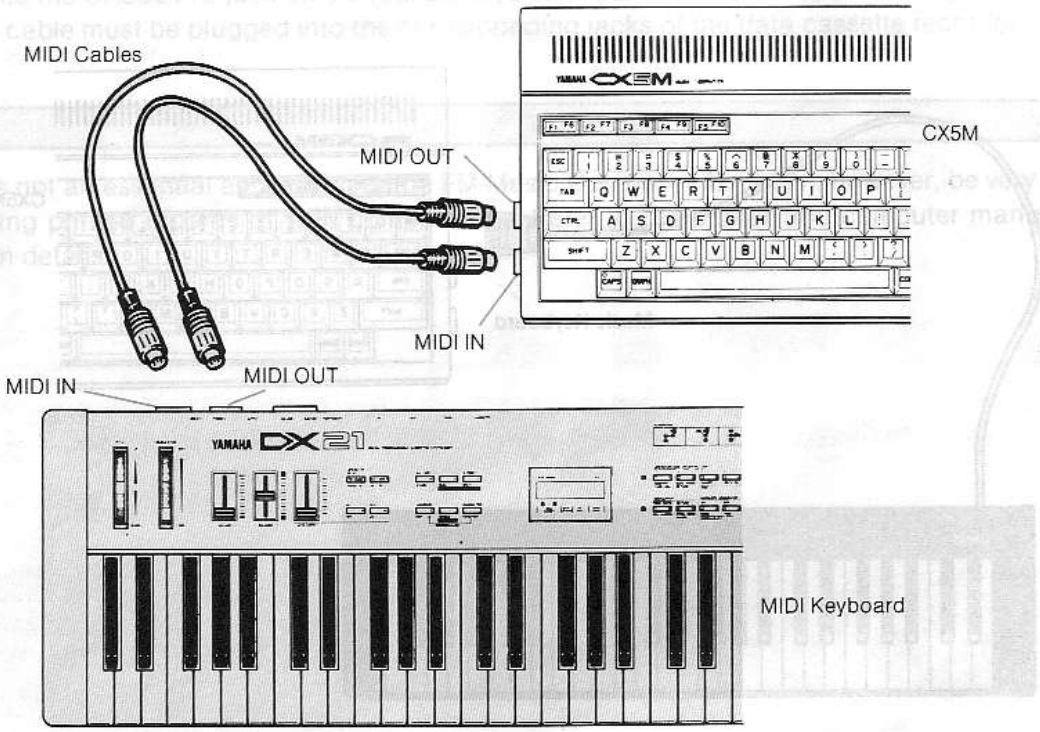


Fig. 6 Connection Diagram for Additional MIDI Instruments

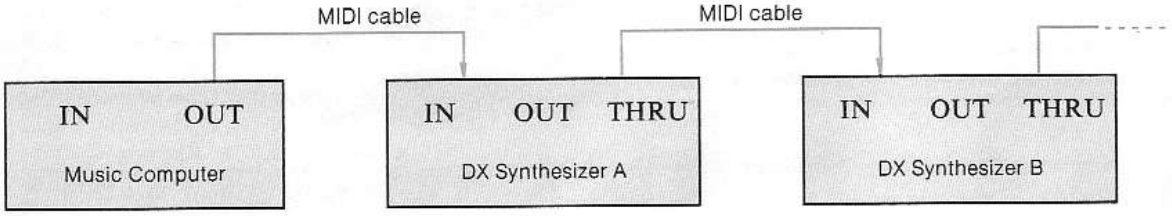
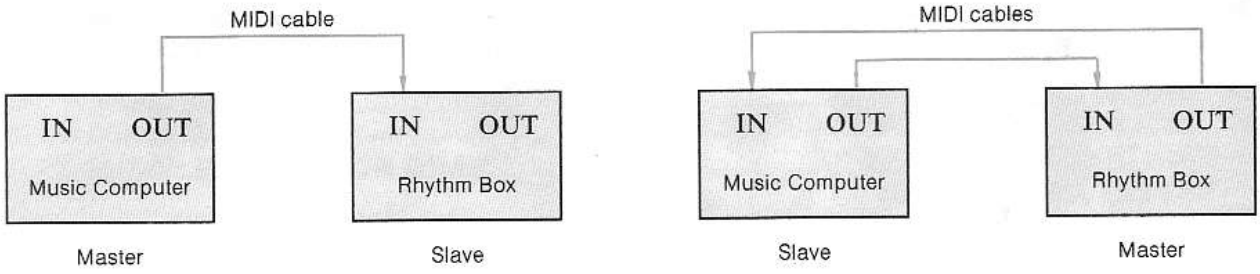


Fig. 7 Connection Diagrams for Synchronized Performance

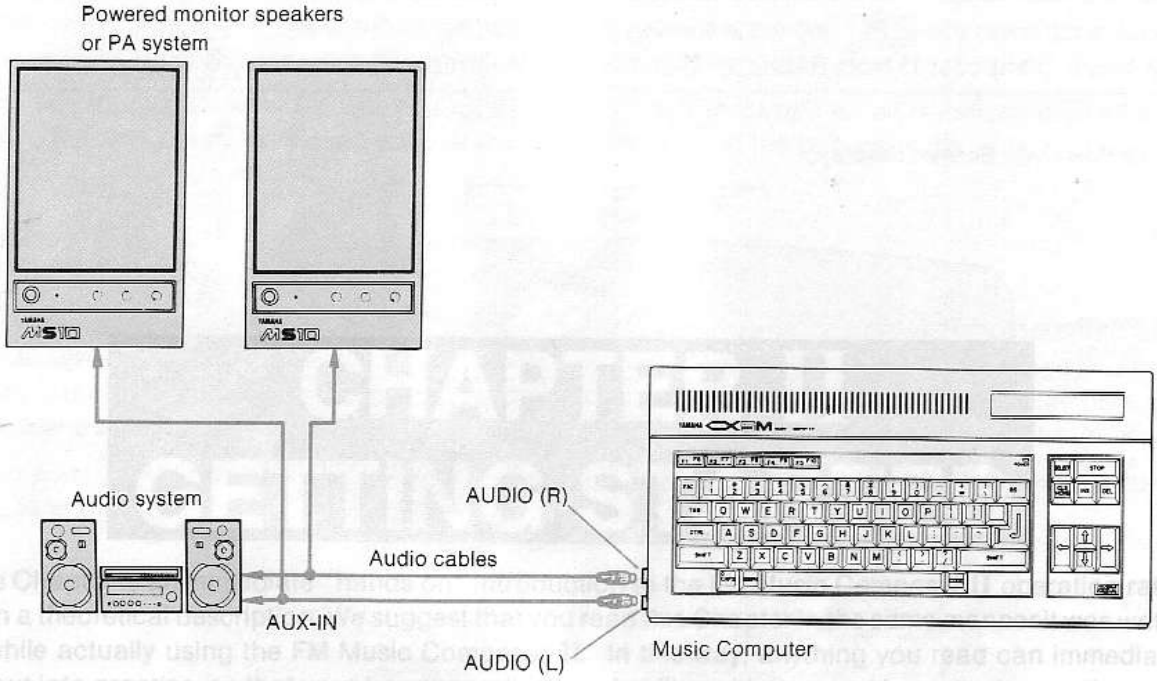


AUDIO EQUIPMENT

Music Computer Audio Terminal

The TV speakers provide the easiest way to listen to an automatic playback. No additional connection is required, and all you need to do is adjust the volume control on your TV set. However, a stereo audio system or a pair of powered speakers will allow you to better enjoy the high quality FM sound.

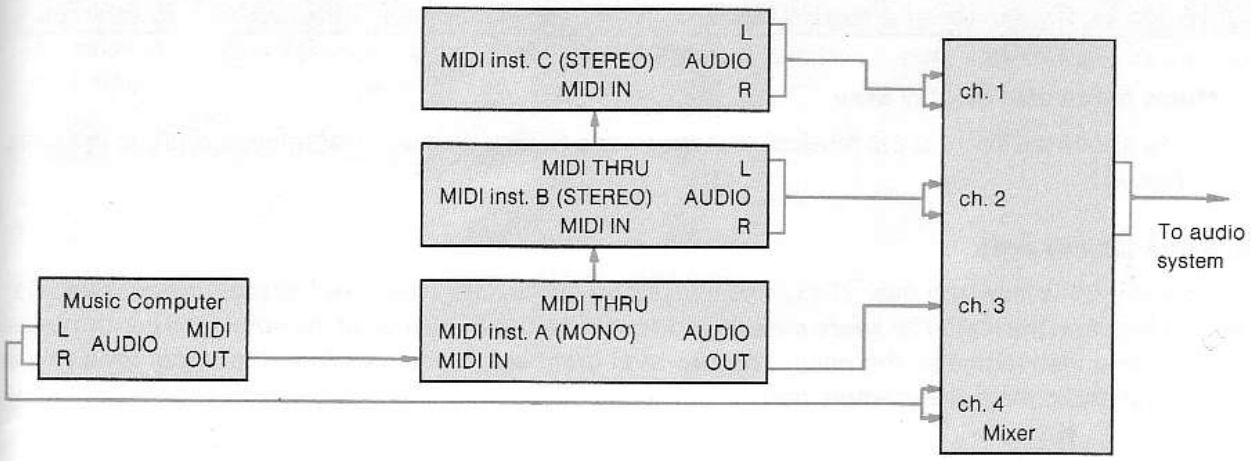
Fig. 8 Connection of an Audio System to the Music Computer Audio Terminals



MIDI Instrument Audio Terminals

When MIDI instruments are used for playback, the audio terminals of each MIDI instrument can be connected either to an audio system (like in Fig. 8) or to a mixer (like in Fig. 9).

Fig. 9 Connection of an Audio System to the MIDI Instruments' Audio Terminals



CHAPTER II
GETTING STARTED

This Chapter is an immediate "hands on" introduction to the FM Music Composer II operation rather than a theoretical description. We suggest that you read this Chapter in the same manner it was written — while actually using the FM Music Composer II. In this way, anything you read can immediately be put into practice, so that your hands can become familiar with the most important operations.

POWER-ON DISPLAY

Starting the Program

(1) Make sure that all your equipment is properly connected.

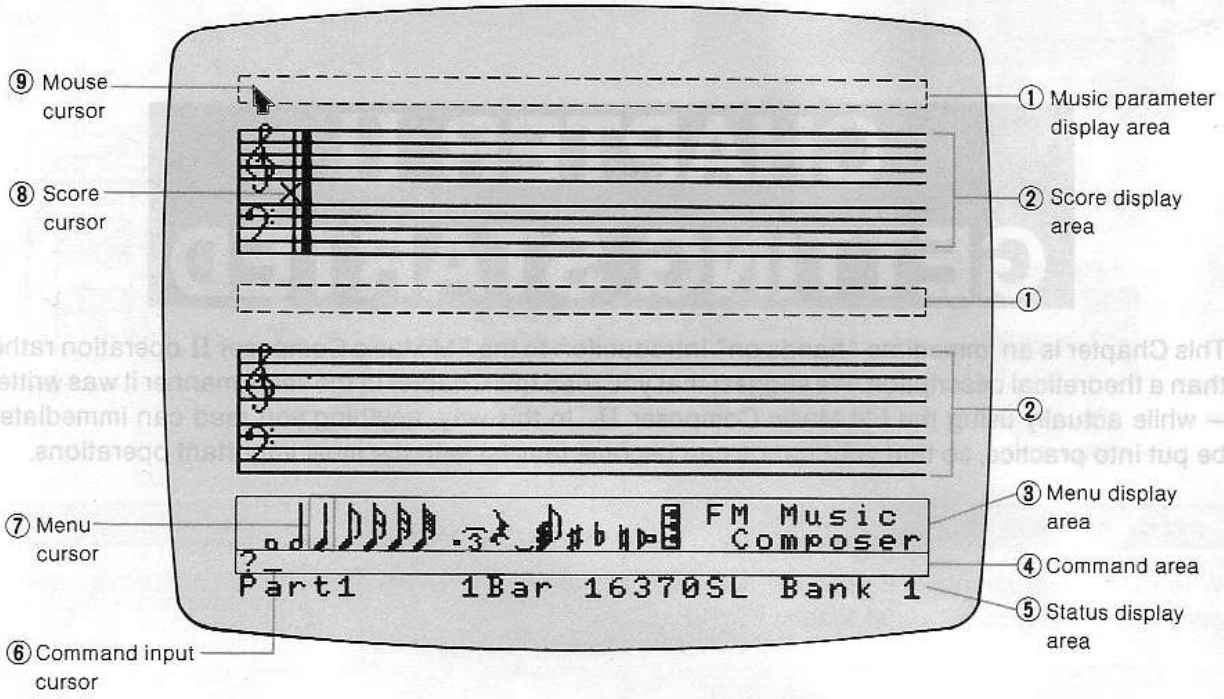
(2) Turn ON the power to the computer. The program will start automatically and the screen will look shown in Fig. 10 if the program is running correctly.

★ If the program does not run, turn OFF the power to the computer and make sure that the ROM cartridge is correctly inserted.

Note:

If you hold down the DEL key while turning the power ON, BASIC will start as usual. To start the FM Music Composer II from BASIC, type in call fmc or _fmc and press the RETURN key.

Fig. 10 Power-on Screen Display



FM Music Composer II Screen Display

① Music parameter display area

The area above the score is the musical sign area used to display music parameters such as dynamic markings, etc.

② Score display area

The great staff (treble and bass clefs) is displayed on two levels. Notes and musical signs (symbols) are displayed on the staff. The **score cursor** ⑧ displays the input position of the notes and performance symbols and also indicates the pitch. The two-level great staff continues from the upper level to the lower level and constitutes a single part.

③ Menu display area

The symbols used for entering notes are displayed here. The **menu cursor** ⑦ indicates which symbol is selected.

④ Command area

The FM Music Composer II has two data input modes.

- **Note mode:** used for the input of notes and rests.
- **Command mode:** used to input performance data other than notes and rests (dynamics, tempo, repeat, etc.) and also for input of control commands.

These two modes are selected with the [SELECT] key and the current mode is indicated by either of the two following signs on the left edge of the command area at the bottom of the screen.

#	Note mode
?	Command mode

When the power is turned on, the display will be set to ? (Command mode) and the **command input cursor** ⑥ will indicate the position of the command to be entered. The display will change to # (Note mode) if the [SELECT] key is pressed once. Pressing it once again will toggle the display back to ? (Command mode).

Commands are entered in the command mode by typing the command into the command area following the ?, and then pressing the [RETURN] key.

⑤ Status display area

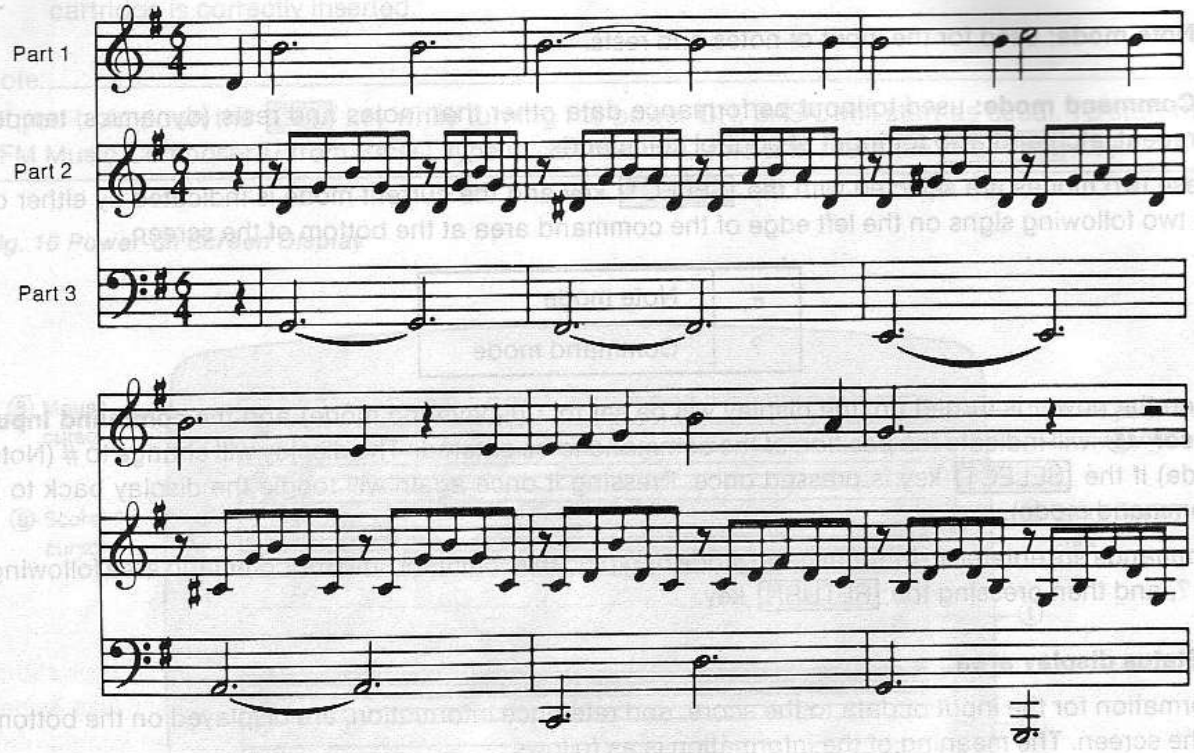
Information for the input of data to the score, and reference information, are displayed on the bottom of the screen. The meaning of the information is as follows:

- **Part:** this is the part number of the score which is displayed on the screen.
- **Bar:** this indicates the number of the first bar displayed.
- **SL (Steps Left):** this is the display for the memory used to store performance data. It indicates the remaining number of steps which can be entered. Each note, sign, etc. is considered to be one step. The indicated value will decrease by one every time there is an input of musical data. The system will display 6908 SL when the power is first turned on (This is true for CX5M. Actually this display depends on the size of the computer's memory.). This number does not represent the maximum number of notes which can be "recorded" since dynamic symbols, rests, and so forth all use up one step.
- **Bank:** this indicates the bank number.

INPUT OF AN ACTUAL SCORE

The followings is a practical introduction to the FM Music Composer II: we are going to input and play back the score shown below.

Fig. 11 Liebesträume No. 3 by Liszt



Turn ON the power to the computer. Part 1 and Bank 1 will appear on the status display area.

Setting the Key Signature

There is one sharp (#) next to the treble clef at the left of the score. This is the key signature and shows that this piece is in G major. There is no need to mark the sharps for the F notes in the score since they are already indicated by the key signature.

(1) Select the command mode by using the [SELECT] key.

(2) Type in key = 1# and press the [RETURN] key.

One # will be displayed on the score. (The key signature will only be indicated in the treble clef).

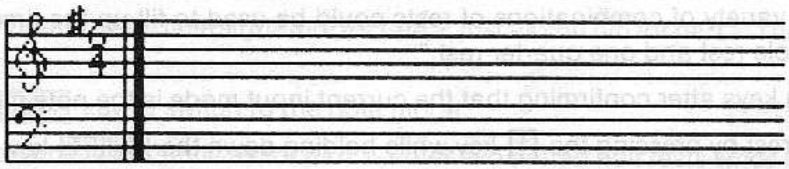
Setting the Time Signature

The time signature follows the key signature. This piece is in 6/4 time (6 quarter notes/bar). When this time signature is entered into the FM Music Composer II, the bars will automatically be located accordingly.

(1) Select the command mode by using the [SELECT] key.

(2) Type in time = 6/4 and press the [RETURN] key.
6/4 will be displayed on the score.

Fig. 12 Key and Time Signature



Input of Notes and Rests

The next step is to input the notes. Press the SELECT key to switch to the note mode. While there are various ways to input note and rest data, in the following instructions we will describe the method that uses the computer keyboard.

Fig. 13 Keys Used for Entering Note Pitch

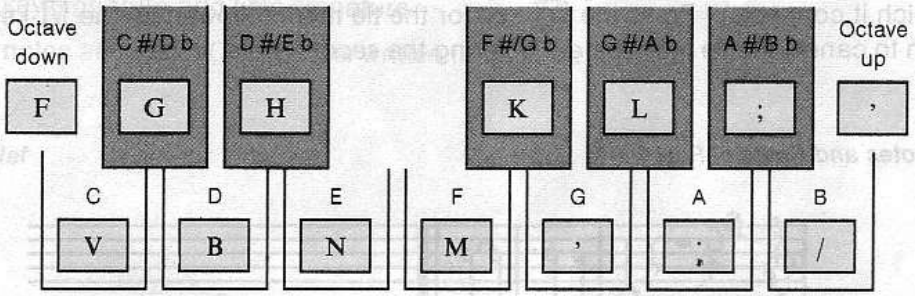


Fig. 14 Keys Used for Selecting Parameters on the Menu

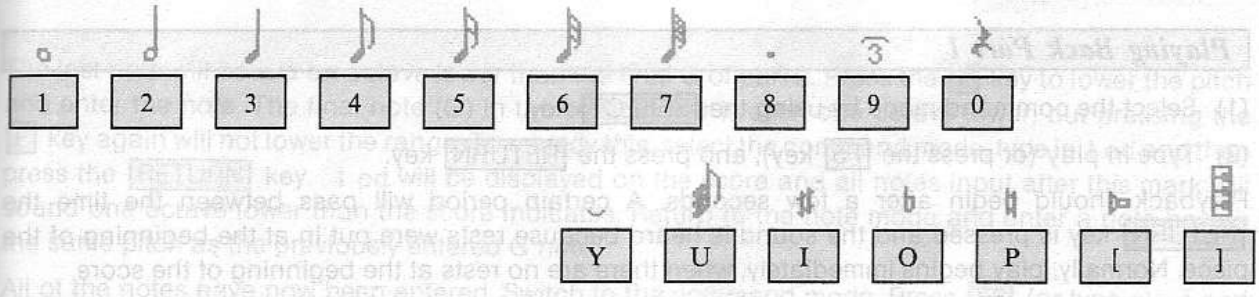
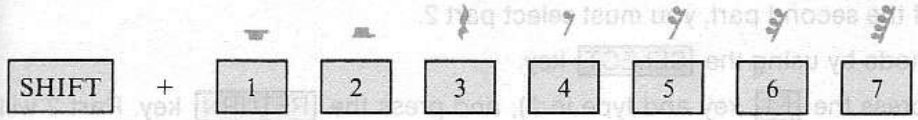


Fig. 15 Keys Used for Entering Rests



The first note of the score is a D and starts on the 6th beat of the measure. Since the FM Music Composer II uses only complete measures, rests will need to be added before the quarter note D to account for the first 5 beats. A variety of combinations of rests could be used to fill up the time. In our example, we will use one whole rest and one quarter rest."

Press the following keys after confirming that the current input mode is the note mode (#).

(1) Enter a whole rest by pressing the [1] key while holding down the [SHIFT] key. A whole rest mark – will appear on the screen.

(2) Input a quarter rest by pressing the [3] key while holding down the [SHIFT] key. If an input error is made, press the [DELETE] key and re-input the data.

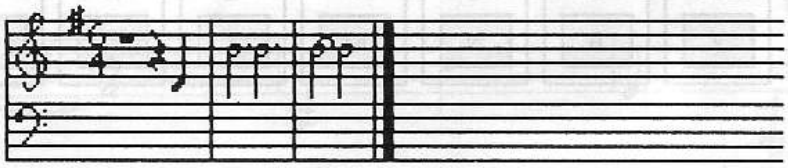
(3) Now it is time to enter the first note. Since this is a quarter note, press the [3] key for the note length ♩ as displayed on the menu. To select D as the pitch, press the [B] key. A quarter note D will appear on the screen.

(4) The next note is a B dotted half note. Press the [2] key for a half note 𝅗𝅥 followed by the [8] key for the dot. Press the [/] key to select pitch B.

(5) The next note is exactly the same so press the [/] key again.

(6) The note following this has a tie mark attached to it (the tie mark combines the time values of the notes which it connects). Press the [Y] key for the tie mark followed by the [/] key. Press the [Y] key again to cancel the tie mark before entering the second note.

Fig. 16 First Notes and Rests of Part 1



★ Pressing the [[] key will allow the notes to be heard as they are entered.

Playing Back Part 1

(1) Select the command mode by using the [SELECT] key.

(2) Type in play (or press the [F5] key), and press the [RETURN] key.

Playback should begin after a few seconds. A certain period will pass between the time the [RETURN] key is pressed and the sound is heard because rests were put in at the beginning of the piece. Normally, play begins immediately, when there are no rests at the beginning of the score.

Selecting Part 2

Before entering the data of the second part, you must select part 2.

(1) Select the command mode by using the [SELECT] key.

(2) Type in part = 2 (or press the [F1] key and type in 2), and press the [RETURN] key. Part 2 will appear in the status display area.

Input of Part 2

(1) Enter the key signature and time signature for part 2, just as you did for part 1. These must be entered for every part.

(2) Press the [SELECT] key to switch to the note mode.

(3) The input procedure is the same as for part 1. Enter two dotted half rests since the first bar is made up entirely of rests. The sharp on the D in the third bar is entered by pressing the [H] key. The pitch of the B note in the seventh bar that is one octave lower is entered by pressing the [F] key before the note is entered (to lower the cursor by one octave) and then pressing the [/] key. Press the ['] key before entering the next B note, to raise the cursor one octave.

(4) Select the command mode after part 2 has been entered and play back the part by pressing [F5] and [RETURN].

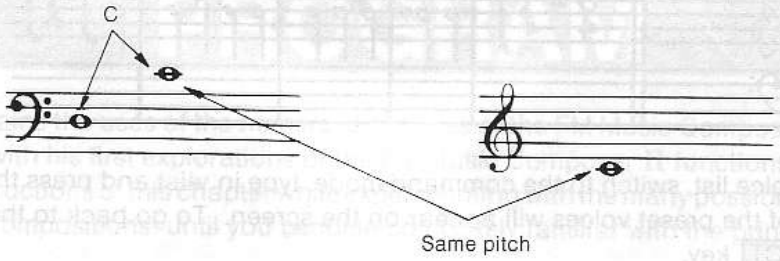
Input of Part 3

(1) Select part 3 as you did for part 2.

(2) Enter the key signature and time signature.

(3) Enter the notes and rests. (This part is written in bass clef.)

Fig. 17 Bass Clef



The last note will be a G an octave lower than the final G of part 2. Press the [F] key to lower the pitch and enter the note. The final note (G) in the seventh bar is even one octave lower, but pressing the [F] key again will not lower the range. To remedy this, select the command mode, type in 1 od and then press the [RETURN] key. 1 od will be displayed on the score and all notes input after this mark will sound one octave lower than the score indicates. Return to the note mode and enter a note having the same pitch as the previously entered G note.

All of the notes have now been entered. Switch to the command mode. Press [F5] (or type play) and press [RETURN] to listen to the piece. The default piano voices will be heard. The voices are the next things to be set.

Setting the Voices

Voice setting starts from part 1.

(1) Switch the screen display to part 1 by entering the command mode, pressing [F1], typing in 1, and pressing [RETURN].

(2) Select the note mode. The score cursor will appear on the left edge of the score.

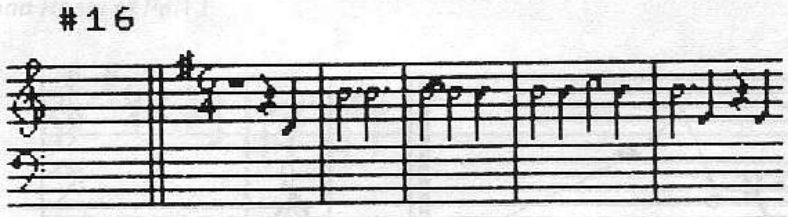
(3) Press the [INS] key and the shape of the score cursor will change from × to +. This indicates the insertion mode in which notes and other parameters can be inserted at the position of the score cursor.

(4) Select the command mode, type in # = 16, and press the [RETURN] key. # 16 will be inserted at the cursor position. This sets the voice of part 1 to flute.

(5) Confirm this by playing the piece (Press [F5] and [RETURN]).

(6) Set parts 2 and 3 to various voices using a similar approach, and listen to them. Actually, if the unit is still in insert mode (red + cursor), you can press [F1] (part =) and type 2 to select part 2. Then simply type # = n where n is the voice number you want for part 2. The same is true for part 3.

Fig. 18 Setting a Voice



★ To display the voice list, switch to the command mode, type in vlist and press the [RETURN] key. A complete list of the preset voices will appear on the screen. To go back to the previous display, press the [SELECT] key.

CHAPTER III
OPERATING THE PROGRAM

This Chapter explains the uses of the numerous features of the FM Music Composer II. It is organized to help beginner with his first explorations of the FM Music Composer II functions. It is advisable that you follow the instructions of this chapter while experimenting with the many possibilities of this program on short sample compositions, until you become completely familiar with the principal features.

PREPARATIONS

Before starting to input notes and other musical symbols, you must always select the bank and part number, and then set the key signature and time signature.

Setting the Bank (NOT APPLICABLE TO CX5M)

Banks are sub-divisions of the computer's memory. To select the bank, proceed as follows:

(1) Select the command mode by using the [SELECT] key.

(2) Type in bank = n (n = the bank number) and press the [RETURN] key. You may also press the [F3] key, type in n and press the [RETURN] key. Bank n will be displayed at the lower right corner of the screen.

★ The bank number default is 1 when the power is first turned on.

Setting the Part

The FM Sound Synthesizer unit allows a maximum of 8 notes and 8 voices to be played simultaneously. Because of this, the FM Music Composer II will allow independent input of up to 8 parts. Setting the parts is the first step in creating a score.

(1) Select the command mode by using the [SELECT] key.

(2) Type in part = n (n = 1 ~ 8) and press the [RETURN] key. You may also press the [F1] key, type in n (n = 1 ~ 8) and press the [RETURN] key. part n will be displayed at the lower left corner of the screen.

★ The part number default is 1 when the power is first turned on.

Setting the Key Signature

The key signature may be chosen freely. For example, "A major" is indicated by three sharps (#) and "F major" is indicated by one flat (♭). Because these sharps and flats (# and ♭) appear at the beginning of the score as the key signature, they do not need to be specifically written out for each note, in the score. This makes the score easier to read. The key should always be entered unless the song is in the key of "C major" or "A minor" (which, of course, have no sharps or flats).

(1) Select the command mode by using the [SELECT] key.

(2) Using the form key = x, type this command, where × corresponds to the key signature. These key commands are shown in Table 1. For example, "A major" can be entered as key = A, key = f# or key = 3#.

(3) Input is completed by pressing the [RETURN] key. The key signature will appear at the top of the score.

★ The key signature appears only on the treble clef.

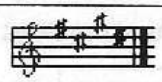
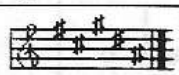
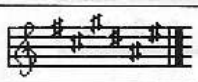
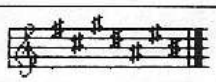
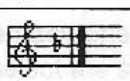
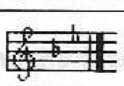
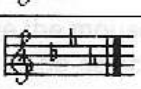
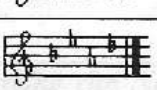
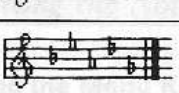
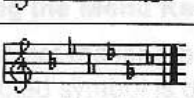
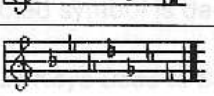
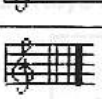
★ "C major" (A minor) is the "default" key signature if no other key signature is set.

★ The key signature can be changed in the middle of a composition.

★ Flats (♭) are entered as a lower case letter b.

★ Upper case letters (major key signatures) are input by typing the letter while holding down the SHIFT key. Lower case letters, representing minor key signatures, are typed without using the SHIFT key.

Table 1 Key Signature and Corresponding Input Symbols

Key signature display	Key signature name	Interchangeable input symbols for the command key =		
	G	G	e	1#
	D	D	b	2#
	A	A	f#	3#
	E	E	c#	4#
	B	B	g#	5#
	F#	F#	d#	6#
	C#	C#	a#	7#
	F	F	d	1b
	B♭	Bb	g	2b
	E♭	Eb	c	3b
	A♭	Ab	f	4b
	D♭	Db	bb	5b
	G♭	G	eb	6b
	C♭	Cb	ab	7b
	C	C	a	0

Time Signature and Bars

(1) Select the command mode by using the SELECT key.

(2) Input the time signature in the form time = a/b. (a = 2, 10, 12, 16 and b = 2, 4, 8, 16). For example, if the time signature is three-quarters, type time = 3/4.

(3) Press the RETURN key to complete input. The time signature will appear at the top of the score.

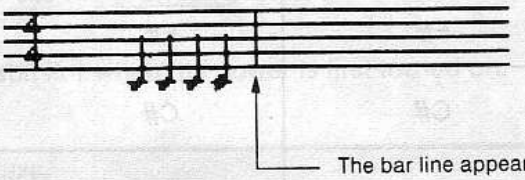
★ The time signature only appears on the treble clef.

★ 4/4 time is the "default" time signature if no other time signature is set.

★ The time signature can be changed in the middle of a song. The bars will automatically be located according to the time signature. When notes cannot fit within the bar limits, three measure bars appear on the score. Be careful with the input notes in order to prevent this from occurring. For example, in 4/4 time, notes are entered as shown below in Fig. 19.

★ Sometimes, the computer cannot calculate the exact location of the bar during note input. In that case, the bar will be located at a wrong place. If this occurs, enter the part = n command (n = number of the part where this error occured). By this procedure, the bar will be re-located at the correct position.

Fig. 19 Location of the Bar



ENTERING NOTES AND RESTS

The procedure for entering notes is divided into three steps.

(1) Selection of dot, tie, etc.

(2) Selection of the note symbol (length).

(3) Selection of the pitch (writing the note onto the score).

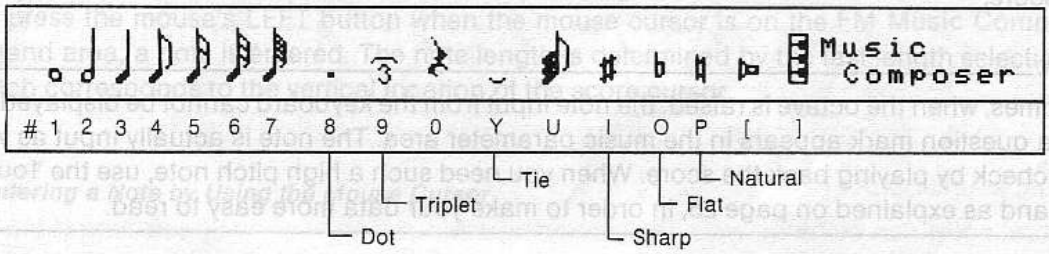
Several methods are available to carry out each of the three above steps.
First, select the note mode by using the [SELECT] key. If you are using a mouse, move the mouse cursor to the left-most character of the command area and press the mouse's LEFT button.

Setting Dots , Triplets, Ties and Accidentals

Using the Menu Keys

When the system is in the note mode, the keys used to select an item from the menu are displayed in the command area. Pressing one of these keys will revert the color of the corresponding symbol in the menu, indicating that the symbol is selected.

Fig. 20 Keys Used to Select Dots, Triplets, Ties and Accidentals



When any one of the above signs are selected, it will be entered with each subsequent note until you de-select the symbol on the menu by pressing the corresponding key.

Using the Mouse

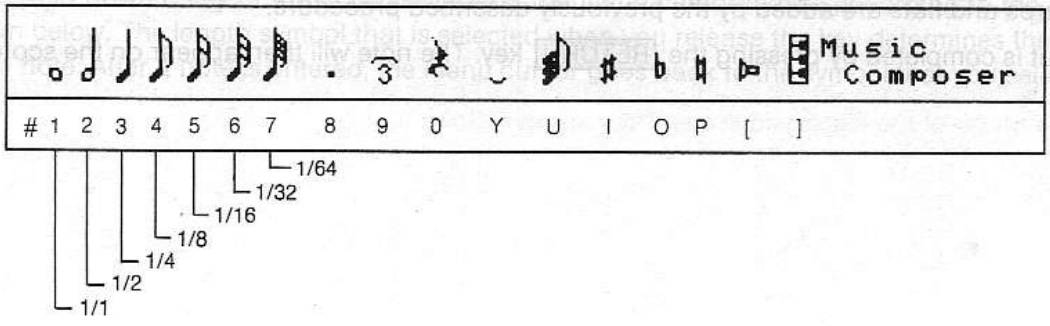
Move the mouse cursor to the symbol to be selected and press the LEFT button; proceed in the same way to de-select a symbol.

Setting the Note Length

Using the Menu Keys

To select the length of the note to be entered, press the corresponding menu key as shown below. A selected symbol is de-selected when you select another length.

Fig. 21 Keys Used to Select Note Length



Using the Mouse

Move the mouse cursor to the note length symbol and press the LEFT button.

Using an External Keyboard (Music or MIDI Keyboard)

This method will be explained later.

Setting the Pitch

Once the note length and special signs (dot, etc) have been selected, you must select the pitch. This last step also enters the note on the score.

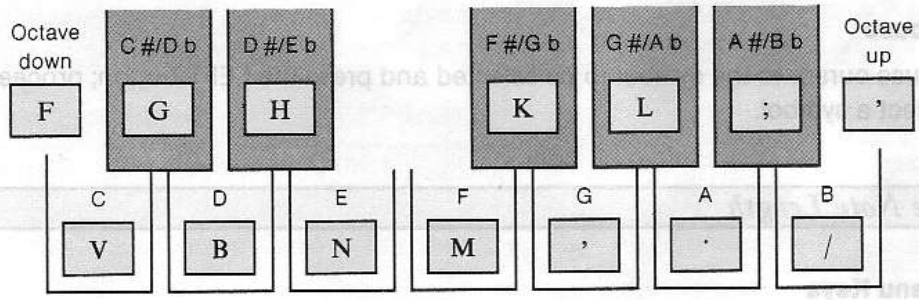
Using the Computer Keyboard

This method was used in Chapter II.
The keyboard is arranged, as shown below, in a one-octave, C through B, 12 note configuration similar to a piano keyboard. When notes are directly entered by pushing the desired keys, the previously set key signature will be ignored. The keys are arranged over a range of one octave, but the octave can be raised or lowered by the octave up and octave down keys, allowing notes to be entered anywhere on the score.

Caution:

Sometimes, when the octave is raised, the note input from the keyboard cannot be displayed. In that case, a question mark appears in the music parameter area. The note is actually input as you can easily check by playing back the score. When you need such a high pitch note, use the 1ou or 2ou command as explained on page 25, in order to make your data more easy to read.

Fig. 22 Keys Used for Entering Notes



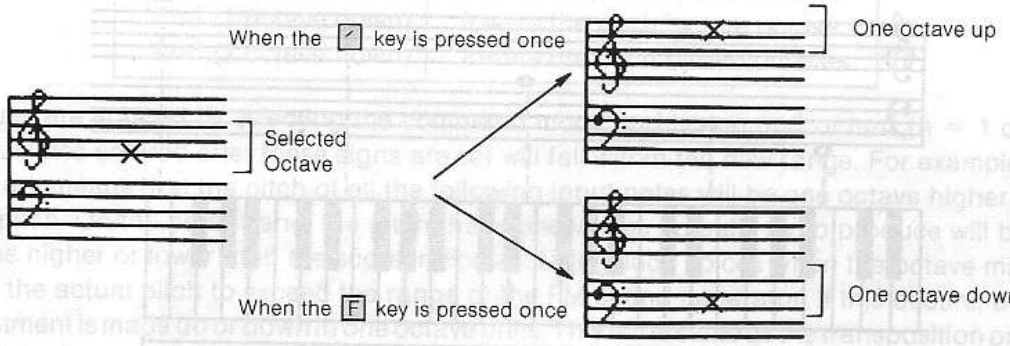
Using the Score Cursor

(1) Set the score cursor to the position on the staff corresponding to the desired pitch. The score cursor is moved by the [↑] key which moves the cursor up and the [↓] key which moves the cursor down.

(2) Sharps and flats are added by the previously described procedure.

(3) Input is completed by pressing the [RETURN] key. The note will then appear on the score.

Fig. 23 Relationship Between the Position of the Cursor and the Selected Range

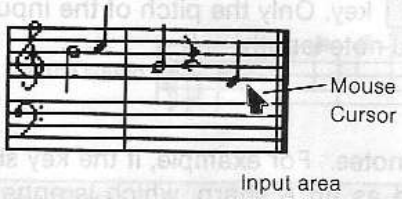


Using the Mouse

In the note mode, the mouse cursor can be used to place symbols (note length, dot, etc.) directly on the score. The selected symbols appear at the tip of the mouse cursor when this cursor is in the score display area. When the note is correctly located, press the mouse's LEFT button to enter the note. The note must be entered in the space between the last note and the end-bar.

★ If you press the mouse's LEFT button when the mouse cursor is on the FM Music Composer or command area, a note is entered. The note length is determined by the last length selection while the pitch corresponds to the vertical location of the score cursor.

Fig. 24 Entering a Note by Using the Mouse Cursor



Using an External Keyboard (Music or MIDI Keyboard)

An external keyboard can be used for entering both the length and the pitch of the notes.

(1) Set the length symbol corresponding to the most frequent note length on the score to be entered. You may use the 1 ~ 7 keys or directly select by using the mouse.

(2) Select the rest symbol by pressing the] key or by using the mouse.

(3) If you depress a key on the music keyboard and release it quickly, a note is entered. Its pitch corresponds to the key that you pressed, and its length corresponds to the selected symbol on the menu. The note is actually entered when the key is released.

(4) If you hold down a key of the music keyboard, the menu cursor moves according to the pattern shown below. The length symbol that is selected when you release the key determines the length of the note. After a note is entered, the menu cursor goes back to the symbol that you selected in (1).

Fig. 25 Relationship Between the Music Keyboard and the Notes Entered

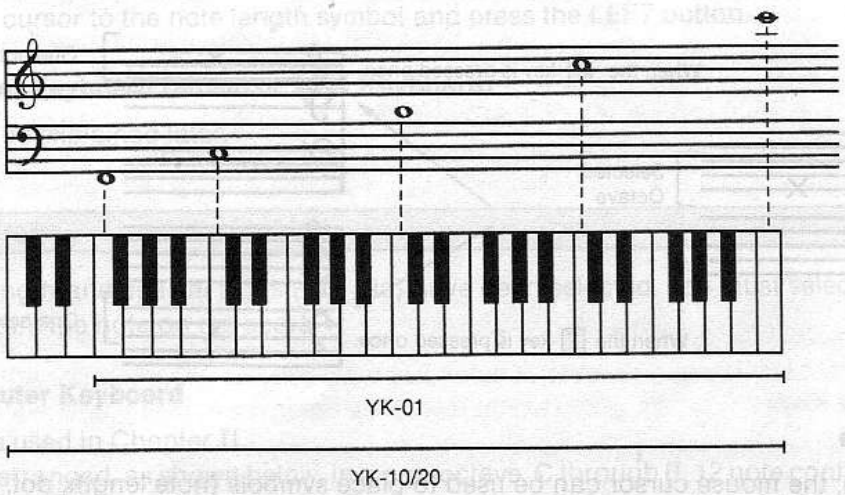
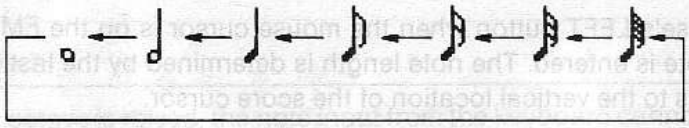


Fig. 26 Note Lengths Are Selected in the Direction Indicated by the Arrow When a Key is Held Down.



★ Setting sound output

The actual notes can be heard while they are being entered. This is done by selecting the mark in the menu by using the menu cursor or by pressing the [ ] key. Only the pitch of the input from the Music Keyboard can be heard, not necessarily the selected note length.

Precautions Regarding Note Input and Score Display

(1) The accidentals use b for flat notes, and # for sharp notes. For example, if the key signature is G major (one #), input this a B flat will be displayed as an A sharp, which is enharmonically equivalent. If the signature is E-flat major (three ♭'s), inputting an A sharp will be displayed as a B flat.

(2) Full notes are displayed with a length of 4 quarter notes.

(3) Sixty-fourth notes are always entered as triplets.

(4) The standard notation for a triplet is but it is displayed on the score as .

(5) When setting the tie symbol, enter the tie mark when the prior note is entered. For example, to input select the quarter note and the tie mark, and input the note. Next, turn off the tie mark and input the eighth note.

Entering the Octave Marks

The FM Sound Synthesizer unit has a range of 8 octaves, but the FM Music Composer II is only capable of displaying 4 octaves on the score. The octave marks are used for entering notes higher and lower than the range of the displayed score. They are as follows:

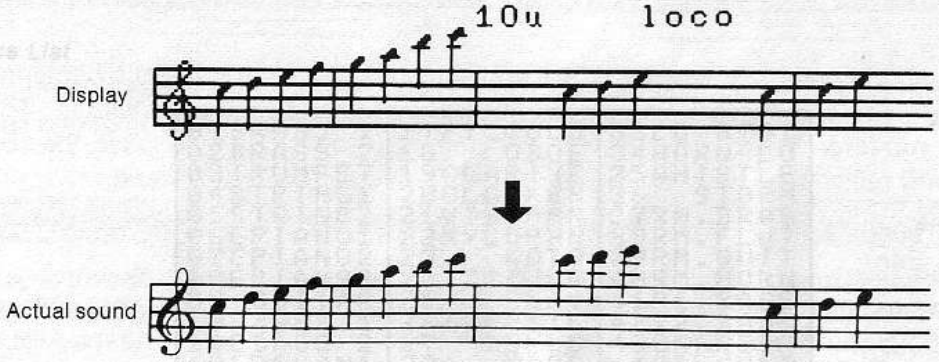
1 ou (1 octave up)	raises the pitch by one octave
2 ou (2 octaves up)	raises the pitch by two octaves
1 od (1 octave down)	lowers the pitch by one octave
2 od (2 octave down)	lowers the pitch by two octaves

These values are entered by selecting the command mode and typing nod or nou (n = 1 or 2) plus [RETURN]. Notes entered after these signs are set will fall within the new range. For example, setting the 1 ou mark means that the pitch of all the following input notes will be one octave higher than the displayed pitch. On the other hand, the pitch that some voices actually try to produce will be one or two octaves higher or lower than the score indicates. Using such voices when the octave mark is set can cause the actual pitch to exceed the range of the FM sound generator. If this occurs, automatic pitch adjustment is made up or down in one octave units. This is the same as the transposition procedure explained later.

The effects of the octave marks are terminated by the loco symbol.

loco	terminates the effect of the octave symbol

Fig. 27 Changes in the Actual Sound Caused by the Octave Mark



Setting the Rests

Setting from the Menu

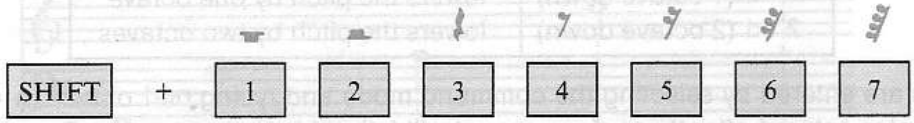
(1) Press the [0] key to select the rest symbol and use the keys [1] ~ [7] to set the length of the rest. All of this can be set by using the mouse.

(2) Press the [RETURN] key to set a rest at the place indicated by the score cursor. You may also place the rest anywhere by using the mouse as explained for the note input.

Setting from the Computer Keyboard

Rests can be entered directly from the keyboard by pressing any numeric key from [1] to [7], while holding down the [SHIFT] key. For example, a quarter rest 𝄽 can be entered by simply pressing [SHIFT] + [3].

Fig. 28 Keys Used for Entering Rests



Entering Rests While Also Entering Notes from the Music Keyboard

Rests can be entered by pressing only the space bar when the program is in the mode used for note input from the music keyboard (the mode set by selecting from the menu).

Select the length of rests to be entered by setting the note length displayed on the menu (i.e., type a number, 1 through 7, prior to entering any rests). Continuing to hold down the space key will move the note selection display (color reverse displayed) of the menu-indicated length. A rest of the indicated length will be entered the instant the space bar is released.

SETTING THE VOICE

The FM Music Composer II allows for the performance of a maximum of 8 parts, each of which can have a different voice assigned to it.

The voice can be selected from among those contained in the FM Sound Synthesizer unit and from those created by means of the Yamaha FM Voicing Program.

Using Voices Contained in the FM Sound Synthesizer Unit

There are two ways for selecting voices. One method uses the computer's keyboard; the other one uses the mouse.

Setting the Voice from the Keyboard

(1) Select the command mode by using the [SELECT] key.

(2) Type in # = n (n = 1 ~ 46), and press the [RETURN] key.

The voice list can be displayed as follows:

(1) Make sure the system is in the command mode.

(2) Type in vlist, and press the [RETURN] key. A list of voices will appear on the screen.

Fig. 29 Voice List

(3) You may also enter the # = n command from this screen.

(4) To go back to the score screen, type in the score command and press the [RETURN] key.

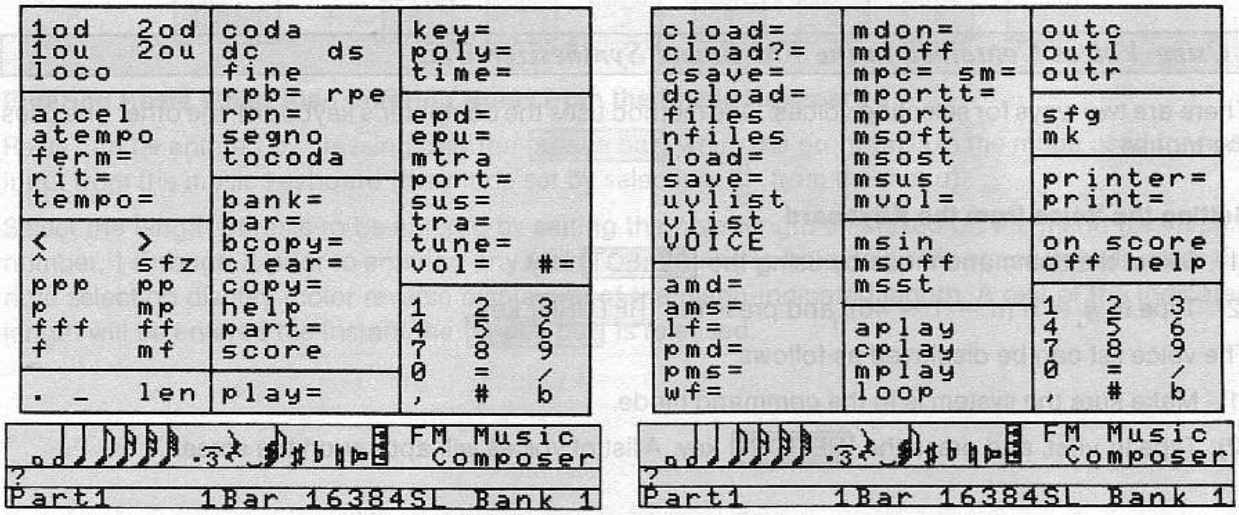
Setting the Voice by Using the Mouse

(1) To select the command mode, position the mouse cursor on the first character in the command line and press the LEFT button.

(2) Press the mouse's RIGHT button. A menu of commands will appear on the screen.

(3) Press the mouse's RIGHT button again. A second menu of commands will appear.

Fig. 30 Command Menus



★ When using the computer keyboard, the above menus can be displayed by entering the help command. You can go back to the score display by using the score command. This is useful for when you forget the format of certain commands. When using the mouse, the above menus are not only remainders, they can be used directly for selecting a command.

(4) Position the mouse cursor over the vlist area and press the LEFT button. vlist will appear in the command area.

(5) To enter the command, position the mouse cursor over the FM Music Composer area at the right of the symbol menu or over the command area and press the LEFT button. The voice list will appear.

★ To cancel a command already displayed in the command area, position the mouse cursor under the command area (status display area) and hold the LEFT button down.

(6) Position the mouse cursor over # = on the command menu of the voice list and press the LEFT button. # = will appear in the command area.

(7) Now position the mouse cursor on the desired voice number and press the LEFT button. The number will appear on the command area.

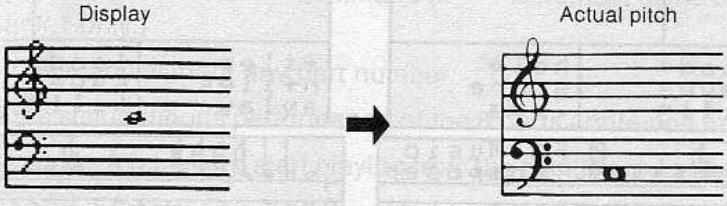
(8) Position the mouse cursor over the FM Music Composer area or over the command area and press the LEFT button to enter the command.

★ If not otherwise set, the various parts will have the following voices:

Part 1	EPIANO 2		Part 5	TRUMPET
Part 2	EPIANO 2		Part 6	PICCOLO
Part 3	EPIANO 2		Part 7	EBASS 1
Part 4	GUITAR		Part 8	EBASS 2

★ Some combinations of voices and notes may cause the actual pitch produced to be one or two octaves higher or lower than the note displayed on the screen. For example, the sound of EBASS 1 will have a pitch one octave lower than the note displayed on the screen.

Fig. 31 EBASS 1 Pitch Comparison



★ When the voices are set separately, there may sometimes be too much vibrato or tremolo. This can be corrected by changing the LFO data (this will be explained later).

Using Voices Created by the FM Voicing Program

The first step is to load the voice data created by the FM Voicing Program from the cassette tape, data memory cartridge or floppy disk (the FM Voicing Program II allows for saving voice data on floppy disk).

Loading Voices from Cassette Tape

(1) Place the tape in the cassette recorder and find the beginning of the voice data file to be loaded.

(2) Select the command mode and input cload = VOICE. VOICE must be entered in capital letters (hold down the SHIFT key). With a mouse, select cload =, then VOICE on the second command menu.

★ The memory capacity will decrease by approximately 1000 steps when the voice data is loaded.

Loading Voices from Data Memory Cartridge

Remember that the memory cartridge must be inserted in the computer's rear slot BEFORE the power is turned ON.
To load voice data from the data memory cartridge (UDC-01), enter the dcload = VOICE command.

Loading Voices from Floppy Disk (not applicable to SFG-01)

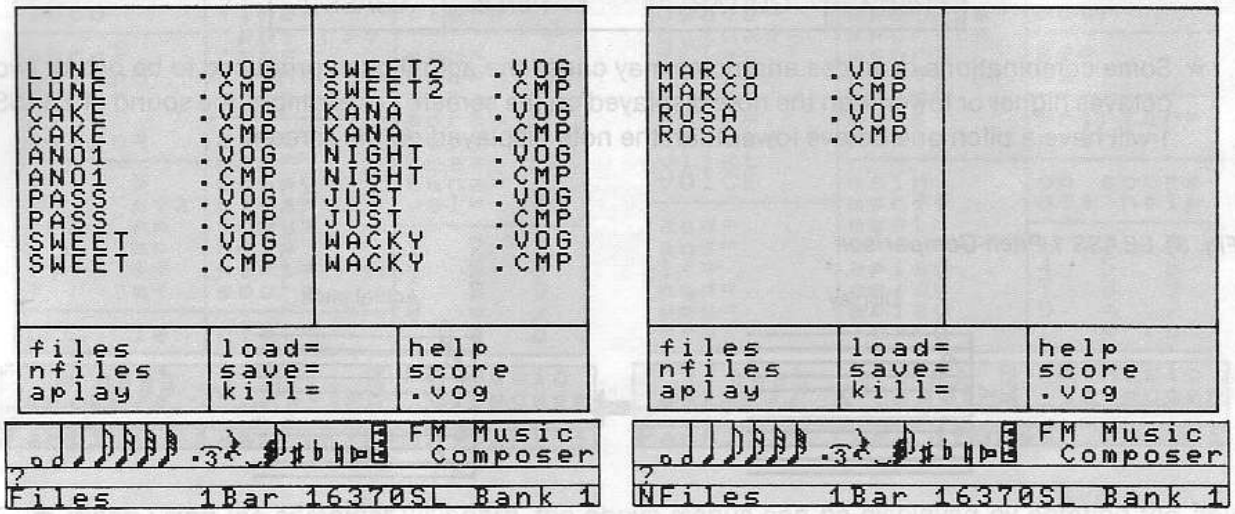
Remember that the floppy disk drive interface must be inserted in the computer's rear slot BEFORE the power to the computer is turned ON.

(1) Insert the disk into the disk drive.

(2) Select the command mode and enter the files command.

A list of the files recorded on the disk will appear on the screen. If all of the file names cannot fit on the screen display area, enter the nfiles command to see the rest of the files. The rest of the files will appear on the screen.

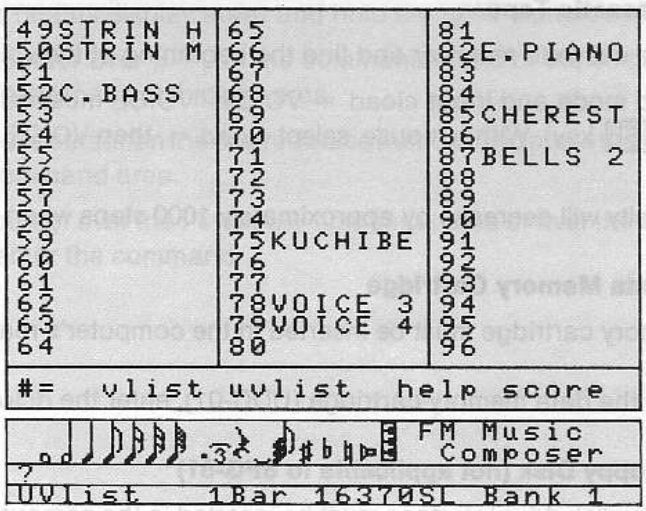
Fig. 32 Example of Files and NFiles Displays



(3) Enter the load = name command. The name of a voice data file is always followed by the .VOG suffix. Other file names do not correspond to voice data.

(4) When the voices are loaded, you can display the list by entering the uvlist command. To select a voice, proceed as explained for the internal voices, but use voice numbers from 49 to 96.

Fig. 33 Example of UVlist Display



Note:

If the loading procedure cannot be carried out properly, you may cancel the operation by pressing CTRL + STOP.

PLAYING BACK

Auto Playback (NOT APPLICABLE TO SFG-01)

Entering the aplay command will cause all the score data files that have been saved on disk to be loaded and played back successively.

Playback stops when all files have been played, when an error occurs or when you press [CTRL] + [STOP].

Chain Playback (NOT APPLICABLE TO CX5M)

Entering the cplay command will cause uninterrupted playback from the current bank to the final bank.

Playback of a Bank

(1) Select the bank by entering the bank = n command (n = the number of the bank you want to listen to). (CX5M has Bank 1 only.)

(2) Enter the play = command without any part number.

This procedure starts the simultaneous performance of the 8 parts contained in the selected bank.

★ Entering play = m causes the bank to start playing from the position indicated by the score cursor.

★ Pressing the [RETURN] key after typing loop will repeat the play until you press [CTRL] + [STOP]. Parts cannot be designated in the same way as the play command; all parts of the bank will play with the loop command.

Playback of Individual Parts

(1) Select the bank by entering the bank = n command (n = the number of the bank containing the part you want to listen to). (CX5M has Bank 1 only.)

(2) Enter the play = n command (n = the number of the part you want to listen to).

This is useful for checking each part. The tempo signs are normally entered in part 1 and therefore, the tempo during the performance of the other parts will have different values, (specifically the initial value of 120). This can make the individual parts difficult to check. If this turns out to be a problem, a tempo mark can be temporarily set for each part and then deleted after each has been checked.

★ If t is entered instead of the part number (i.e. play = t), the performance of the part displayed on the screen will begin from the position indicated by the cursor; all parameters to the left of the cursor will be ignored. In the polyphonic note mode, for example, chords will not be played if the score cursor is to the right of the poly mark when you type play = t and press [RETURN].

★ Playback can be interrupted by pressing [CTRL] + [STOP]. Playback will cease and the unit will enter the command mode.

EDITING THE SCORE

This section deals with editing the score. Data refers to anything which can be entered in the score such as notes, rests, and other parameter markings. Editing refers to the input as well as the deletion and insertion of data.

Displaying the Data to be Edited

First select the bank (bank = n command; not applicable to CX5M) and the part (part = n command). The first bars of the part to be edited will be displayed on the screen. There are three methods for displaying any portion of the part:

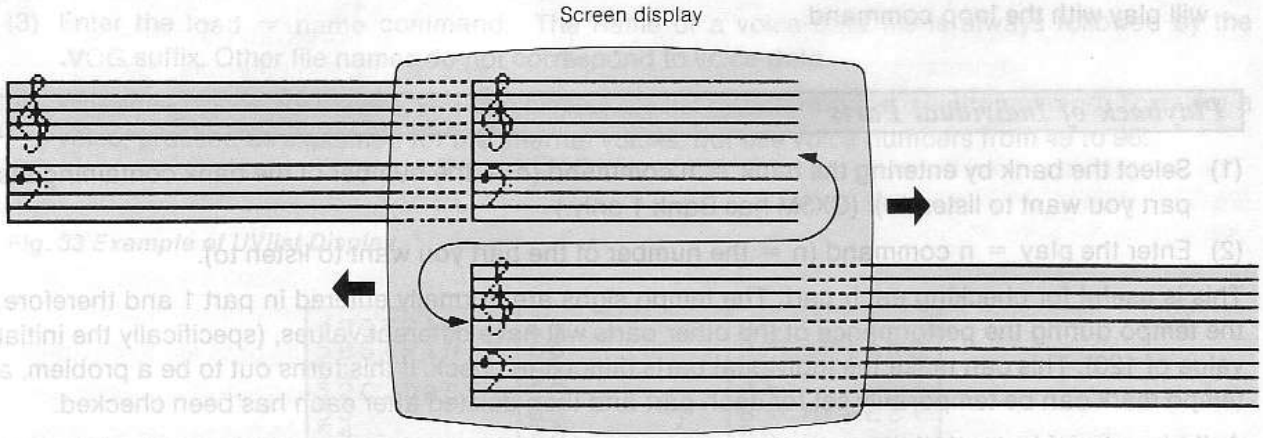
Scrolling by Using the Cursor Keys

Use the [→] and [←] cursor keys to move the score cursor over the part. When the cursor is at the beginning or the end of the displayed portion, the display of the score will scroll forwards or backwards.

Scrolling by Using the Mouse

The system must be in the note mode. To move the score cursor, press the RIGHT button of the mouse and hold it down while moving the mouse to the right or to the left.

Fig. 34 Scrolling



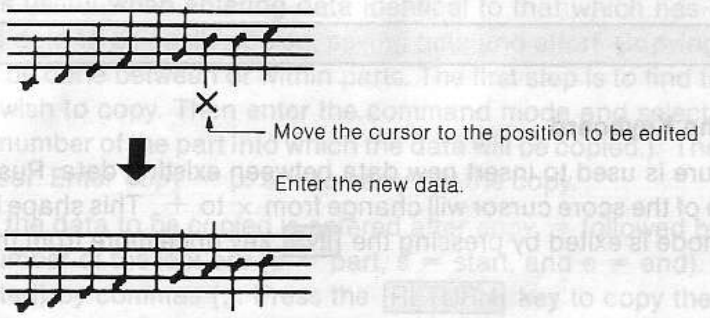
Specifying the Bar Number

The bar = n command (n = the number of any bar belonging to the part) causes the part to be displayed starting with the the specified bar. For long parts, this method is very useful. The [F2] key allows for easy input of bar =.

Changing Score Data

When the pitch needs to be changed or in other cases where editing is possible simply by writing over the data previously input, position the score cursor over the data to be edited and enter the new data. You do not need to be in the note mode to move the score cursor horizontally but be sure that you switch to the note mode before entering the new data.
If you are using a mouse, first select the note mode. Select the symbol(s) and position the mouse cursor at the location of the symbol to be changed. Enter the new symbol by pressing the LEFT button.

Fig. 35 Changing Score Data

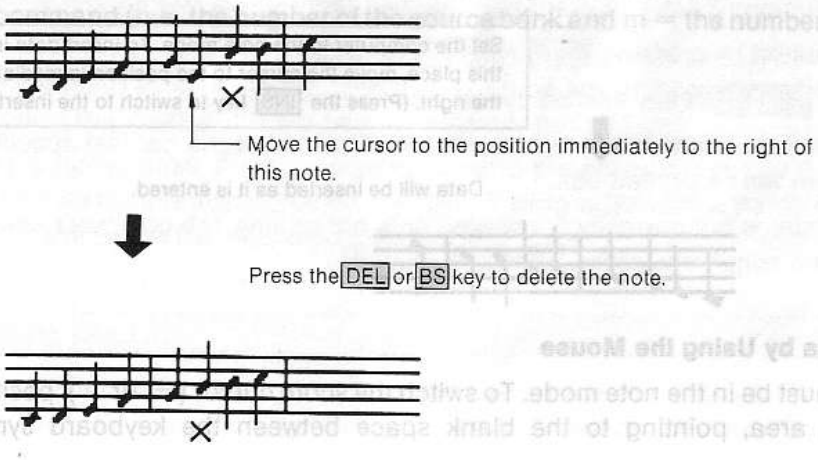


Deleting Data

Deleting Data from the Keyboard

Incorrect or unnecessary sections can be deleted. With the computer in the note mode, move the cursor to a position immediately to the right of the data to be deleted. Push the DEL or BS keys while still in the note mode to delete the data to the left of the cursor. The score to the right of the cursor will move one position to the left each time the DEL or BS key is pressed.

Fig. 36 Deleting



Deleting Data by Using the Mouse

Position the mouse cursor over the status display area and press the mouse's LEFT button.

Deleting All the Data of a Part

The clear command is used to clear all the data of an individual part. Type clear = in the command mode followed by the part that has the data to be deleted. The display will switch to the corresponding part when the RETURN key is pressed.

★ The loaded voice data can be deleted by entering VOICE instead of the part number. If the part number is omitted and only clear = or clear is entered, the data in all of the parts (as well as all voice data) will be deleted when the RETURN key is pressed. The system will then return to the initial "power-on" state.

Inserting Data

Inserting Data from the Keyboard

The following procedure is used to insert new data between existing data. Push the INS key in the note mode. The shape of the score cursor will change from × to +. This shape indicates the insertion mode. The insertion mode is exited by pressing the INS key once more from the note mode.

Fig. 37 Shape of the Score Cursor

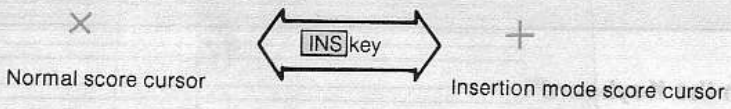
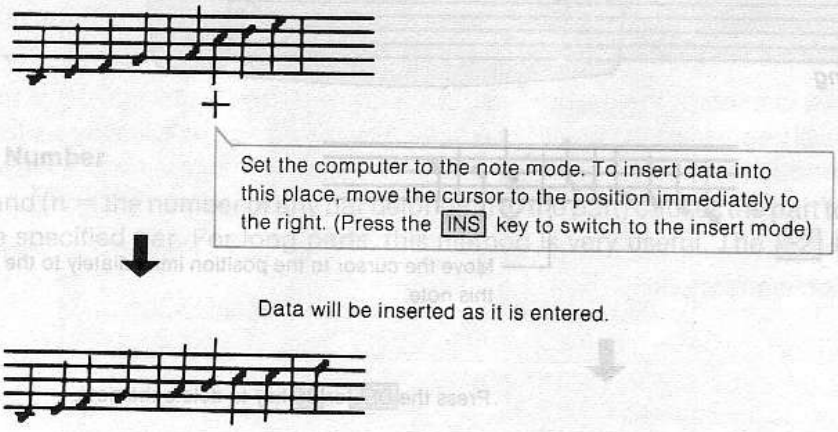


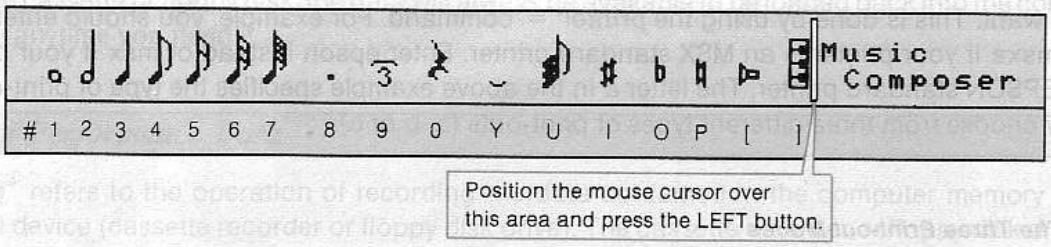
Fig. 38 Inserting



Inserting Data by Using the Mouse

The system must be in the note mode. To switch the score cursor (+ or ×), position the mouse cursor in the menu area, pointing to the blank space between the keyboard symbol and FM Music Composer.

Fig. 39 Switching the Insert Mode by Using the Mouse



Copying Data within a Bank

The copy command is useful when entering data identical to that which has already been entered. This command allows data to be easily copied, saving time and effort. Copying is carried out in bar-length units, and can be done between or within parts. The first step is to find the beginning and end bars of the data you wish to copy. Then enter the command mode and select the target part (enter part = n, n being the number of the part into which the data will be copied.). The input position is then set with the score cursor. Enter copy = p, s, e to carry out the copy.

The part number p of the data to be copied is entered after copy = followed by s, the number of the first bar, and e, the number of the last bar (p = part, s = start, and e = end). The respective values are delimited (separated) by commas (,). Press the [RETURN] key to copy the specified data to the location specified by the cursor. For example, if copy = 1, 1, 5 is entered when part 2 is selected, the data contained in bars 1 to 5 of part 1 will be copied into part 2.

Note:

If the data is to be copied to the middle of a part that already has data, first change the score cursor from × to the + insertion cursor to allow data to be inserted in the specified location. Copying can be interrupted while in progress by pushing [CTRL] + [STOP]. Copying will stop the instant the keys are pressed.

Bank Copy (NOT APPLICABLE TO CX5M)

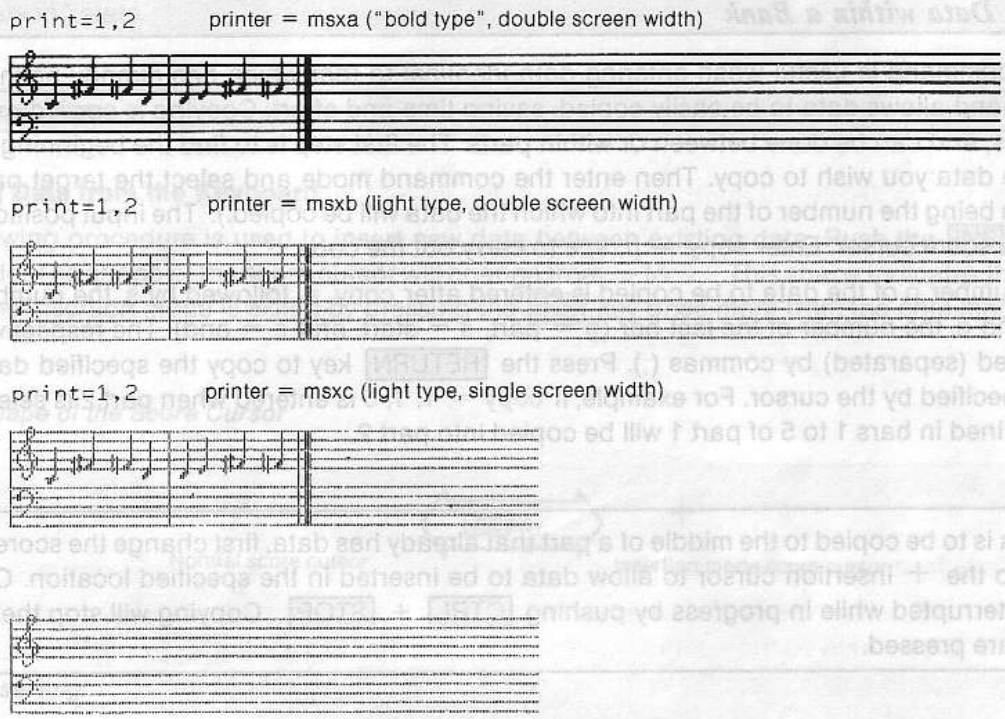
To copy one part of a bank into a given part of another bank, first set the destination bank (bank = command), and then set the destination part in that bank (part = command). Enter the bcopy n, m command (n = the number of the source bank and m = the number of the source part in bank n).

PRINTING OUT THE SCORE

Printing the score is possible if you have an MSX or EPSON standard printer connected to the computer.

(1) First, you must tell the computer what kind of printer you have connected, and the type of print-out you want. This is done by using the printer = command. For example, you should enter printer = msxa if your printer is an MSX standard printer. Enter epson instead of msx if your printer is an EPSON standard printer. The letter a in the above example specifies the type of print-out. You may choose from three different types of print-outs (a, b or c).

Fig. 40 The Three Print-out Modes



(2) Select the part to be printed out (Command mode, F1, part no.)

(3) With the computer still in the command mode, type print = n,m (n is the first bar to be printed and m is the last bar). Thus, to print out bars 6 through 33 inclusive, type print = 6,33. print = can be entered by pressing F10 (SHIFT + F5).

(4) Press the RETURN key to start the print out process.

★ The print-out is carried out in screen units. Thus, all of the bar last specified which appears in the screen will be printed out.

★ If the printer is not correctly connected or is not on-line, the computer will wait indefinitively. To cancel the command, press CTRL + STOP.

SAVING AND LOADING

The FM Music Composer II can save your score data on cassette or floppy disk. This is important because anytime you turn OFF your computer, all the memory will be lost, including your score. Once saved on cassette or floppy disk, the data will always be available to be loaded back into the computer's memory anytime you need it.

Saving Performance Data

"Saving" refers to the operation of recording the data contained in the computer memory onto an external device (cassette recorder or floppy disk drive). The cassette recorder or floppy disk drive must be connected to the computer before turning the power ON. If you are using a floppy disk drive, turn ON the disk drive before turning ON the computer. Also, remember that inserting or removing a floppy disk while the operation indicator is lit may damage the data recorded on the disk.

Saving Data on Cassette Tape

The csave command is used to save the score (performance data) on cassette tape.

(1) Insert a cassette tape into the cassette recorder.

(2) Select the command mode (?).

(3) Save the data by inputting csave = name. The name can be any combination of up to six alphanumeric characters. csave can be entered by pressing the F6 key (SHIFT key + F1 key).

(4) Start recording on the cassette tape by pressing the RETURN key.

(5) The cassette recorder will stop after the data has been saved (assuming the "remote" jack on the recorder is connected to the computer).

★ Carefully indicate in the cassette directory the name of the score as well as the exact location of the score in the tape.

★ Entering the cload? = name command just after saving a file and rewinding the tape allows for checking whether the file has been correctly saved or not. If the Verify error message appears, check the cassette recorder's volume and tone settings, and its connections to the computer, and try saving again.

Saving Data on Floppy Disk (applicable to SFG-05 only)

The save command is used to save the score on a floppy disk.

(1) Insert a floppy disk into the disk drive.

★ The disk should have been previously formatted by using the _FORMAT command of the MSX DISK BASIC.

(2) Save the data by inputting save = name. The name can be any combination of up to 8 alphanumeric characters. (The .CMP suffix will be automatically added.)

★ Before selecting a name, enter the files command (and the nfiles command if necessary) to display the list of the files already stored on the disk. Saving a file with a name that is already saved will erase the previous file. See information p.30.

Loading Performance Data

"Loading" refers to the operation of reading into the computer memory the data saved on an external device (cassette tape, Data Memory Cartridge or floppy disk). These devices must be connected to the computer before turning the power ON.

Loading from a Cassette Tape

(1) Fast forward and rewind operations may not be possible when the cassette recorder "remote" jack is connected to the computer. Remove the "remote" (black) cable from the remote control jack of the cassette recorder when the tape needs to be rewound or fast forwarded. Re-insert the cable after fast forward or rewind operations have been completed.

(2) Select the command mode (?).

(3) Load the desired data by inputting cload = name. The name must correspond to the name used for saving the data. If you omit the name, the first data found on the tape will be loaded.

(4) Start loading by pressing the RETURN key.

(5) The cassette recorder will stop after the data has been loaded and the beginning of the score will be displayed on the screen.

Note:

If the cassette recorder is not correctly connected or if the inputted name does not correspond to a name recorded on the cassette, the computer will not load any data and you must cancel the command by pressing CTRL + STOP.

Loading from a Floppy Disk (applicable to SFG-05 only)

(1) Insert the floppy disk into the drive.

(2) Enter the files command to display the list of the files recorded on the disk. If the list cannot fit in one screen page, use the nfiles (next files) command. This causes the rest of the file names to be displayed.

★ The file name of a performance file is followed by the suffix .CMP.

(3) Enter the load = name command. You do not need to write the file name's suffix.

★ Entering the aplay command will cause all the performance files to be successively loaded and played back.

★ To erase an unwanted file, enter the kill = name command. This applies also to voice files.

PERFORMANCE INDICATIONS

Dynamic Markings

The markings used to express dynamics are given in table 2.

Table 2 Dynamics Symboles and Their Preset Value

Display	Effect	Preset value
ppp	very weak (pianississimo)	16
pp	(pianissimo)	48
p	weak (piano)	80
mp	moderately weak (mezzo piano)	112
mf	moderately strong (mezzo forte)	144
f	strong (forte)	176
ff	(fortissimo)	208
fff	very strong (fortississimo)	240

There are two kinds of dynamics setting:

Using the Preset Values

Input of the symbols ppp, pp etc. without other specification will set the dynamics according to the preset value of each symbol (see table 2).

(1) Select the command mode.

(2) Enter the desired dynamic mark.

(3) Push the RETURN key to complete the input. The dynamic mark will appear on the score.

Inputting Your Own Settings

Instead of using the 8 standard music notations (ppp to fff), more precise dynamic settings, over the range of 1 ~ 255, can be used. This is set by the following procedure.

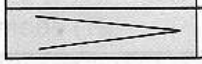
(1) Make sure that the system is in command mode.

(2) Set the value in the form of any dynamics marking followed by an equal (=) sign and the set value (for example, f = 180).

(3) The dynamics marking and the set value will appear on the score. The preset values are shown in Table 2. Input of the numeric values will determine the dynamics regardless of the dynamics signs entered. For example, input of f = 5 is the same as fff = 5 and will provide a softer level than ppp with no numeric value. In other words, ppp = 20, mf = 20, and fff = 20 will produce the same volume effect.

Changes in dynamics

The following markings are normally used to indicate changes in dynamics during the performance of a piece. They can also be used with the FM Music Composer II for the same purpose.

	(crescendo) increase volume
	(decrescendo) decrease volume

(1) Set the unit to the note mode and position the score cursor (using the [←] and [→]) to the location where you want the change.

(2) Select the command mode.

(3) Type the change in dynamics by using the [<] key or the [>] key plus the [=] key and a numeric value, according to the following:

< = n crescendo
> = n decrescendo

n is a number in the range of 1 to 255. The smaller n is, the faster the dynamics change. If n is omitted, the previously set value for the current part will be used (the default value for n is set to 12 when the part is first set).

(4) Press the [RETURN] key to complete data input. < or > (and the set value) will appear on the score.

Accents

The following markings are used to emphasize certain notes. Each marking will affect only the following note.

An ^ (accent) adds a specified emphasis value to a note when it is played. If the value is omitted, the value already set in that part is used (the initial value is 16).

An sfz (sforzando), the note is played at the set level regardless of the present value. If the value is omitted, the value already set in that part is used (the initial set value of the part is 255, the maximum emphasis).

(1) Select the command mode.

(2) Type the emphasis marking according to the following:

^ = n
sfz = n

Where n is the value of the desired emphasis; set as needed.

(3) Press the [RETURN] key to complete the data input. The mark (and set value) will appear on the score.

★ Note that some voices, such as PORGAN 1, 2 etc., will not be affected at all by the accent markings. The above accent parameters cause changes in velocity dynamics. Thus, the set velocity sensitivity value of the voices (as created using the FM Voicing Program) will determine the degree to which these voices are affected by the accents. You can increase the velocity sensitivity of a given voice (using the FM voicing program) to increase the sensitivity to changes in accent values (emphasis).

Tempo Markings

The tempo markings will affect all parts. Enter them in part 1.

Tempo Settings

(1) Select the command mode.

(2) Input the tempo in the form of tempo = n. The value of n (40 ~ 200) determines the tempo (n is the number of quarter notes per minute). If tempo = 60 is input, the subsequent performance will have a tempo equivalent to one quarter note per second. The tempo can be changed in the middle of a piece. The default tempo will be ♩ = 120 if another tempo is not set.

(3) Press the RETURN key to complete the input. ♩ = n will be displayed on the score.

Changes in Tempo

The tempo can be changed during a piece by input of the following markings:

accel	(accelerando) tempo increases
rit	(ritardando) tempo decreases

(1) Select the command mode.

(2) Input the change in tempo by entering accel or rit according to the following:

accel = n
rit = n

n is a number in the range of 1 to 255 and sets the rate of change. The smaller n is, the faster the tempo changes.

If n is omitted, the previously set value of the part is used (default n is initially set to 12).

(3) Press the RETURN key to complete the data input. The mark will appear on the score.

★ To return the tempo to its original setting, enter the command atempo.

Fermata

The fermata mark is used to extend a note or rest by stopping the clock during playback.

(1) Select the command mode.

(2) Enter the of fermata in the form of ferm = n. The value of n (1 ~ 16) determines how long the note or rest is extended. The higher the value, the longer the extension. If the value n is omitted, the previously set value is used. The default value of n is initially set at 4.

(3) Press the RETURN key to complete the input. 𝄐 n will be displayed on the score.

★ The fermata mark temporarily causes the tempo to become 0. If the fermata mark is entered after a note, only the non-voiced part will be extended; the voiced part will not be.

★ The length of extension is n times the denominator of the key signature. For example, if ferm = 1 is set when the key signature is 3/4, the extension time will be equivalent to two quarter notes.

Performance Parameters

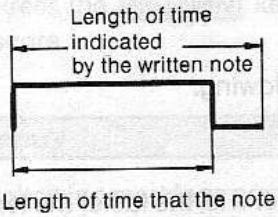
Note length is indicated for each individual note during input. However, when a piece is actually performed, various changes can be made to the length of the notes. For example, notes may be shortened and cut off from each other (staccato ♩) or sustained for their full time value (tenuto ♩). The following parameters allow for these changes in expression.

len mark

The FM Music Composer II normally plays notes for about 4/5 of their actual length (n = 200). This length can be changed by the len mark.

The len mark is entered in the form len = n. n, which can be a value from 1 to 255, determines the length a note is played. Type len = n and press the RETURN key. Len will be displayed on the score. Setting n to 255 will result in the entire length of the note being played. If n is set to 128, the note will be played for half of its indicated length.

Fig. 41 Len Mark

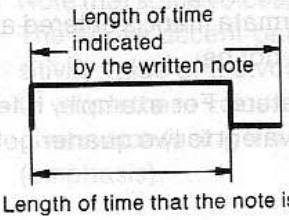


. mark (staccato)

The len mark sets the length that a note is played in proportion to the length of the note. The . mark directly sets the length of a note.

The . mark is entered in the form of . = n. n is the value which determines the length the note is played. Type . = n and press the RETURN key. . n will be displayed on the score. n is a length value from 1 to 16 with a quarter note having a length of 24. For example, setting the value of n to 6 will result in a note being played for the length of a sixteenth note. This mark sets the length that the note is played directly so that the types of notes have no relationship to the length.

Fig. 42 . Mark (staccato)

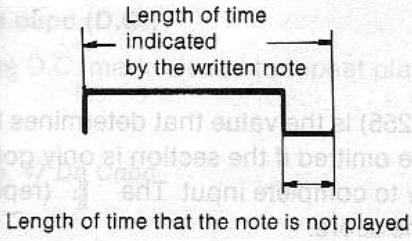


_ mark (tenuto)

The _ mark performs the opposite function of the . mark and directly sets the length that a note is not played.

The _ mark is entered in the form _ = n. n is the value which determines the length of time for which a note will stop playing. Type _ = n and press the RETURN key. _ n will be displayed on the score. n is a length value from 1 to 16 with a quarter note having a length of 24. For example, setting the value of n to 6 will result in the note not playing for a time equivalent to sixteenth note. If the note is a quarter note, the note will play as a dotted eighth note. If the length of the tenuto is longer than the length of the note, the length of time that the note will play will be set to 1. This mark directly sets the length a note will not play; the types of notes have no relationship to the length of time a note is played.

Fig. 43 _ Mark (tenuto)



★ There is a close relationship between the len mark, the . mark, and the _ mark. Inputing any one of these will alter the length of time a note is played. This length can be returned to its initial setting by inputting len = 200.

★ A note will play, to use the example of a keyboard instrument, while the key is being depressed. With some voices, however, there may be some residual sound output after the key is released.

Portamento (Applicable to SFG-05 only)

The portamento works with monophonic parts only (poly = 1). The port = n (n = 0 ~ 255) specifies the portamento speed. During playback, the transition of the pitch between successive notes is made continuous by this command.

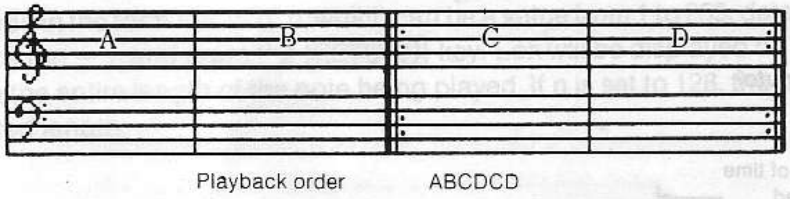
REPEAT SIGNS

The following symbols are used to indicate that a certain portion of a piece is to be repeated. This saves both time and memory space since that portion does not need to be entered in the score twice.

Simple Repetition

The section between the 𝄆 and 𝄇 signs is repeated.

Fig. 44 Simple Repetition



Playback order ABCDCD

(1) The beginning of the section is marked as rpb = n. n (2 ~ 255) is the value that determines the number of times the section is going to be repeated. n can be omitted if the section is only going to be repeated once (played twice). Press the RETURN key to complete input. The 𝄆 (repeat beginning) mark (and repeat number) will be displayed on the score.

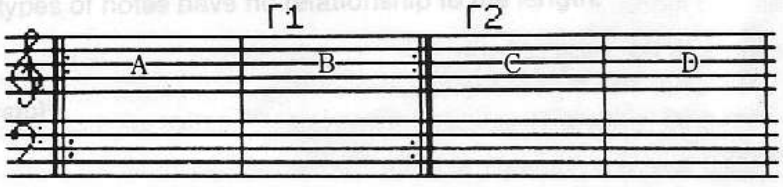
(2) The end of the section is marked rpe. Press the RETURN key to complete input. The 𝄇 (repeat end) mark will be displayed on the score.

★ rpb is an abbreviation for "repeat begin"; rpe stands for "repeat end".

More Repeat Symbols

The endings 1 and 2 on the score indicate that the repeated section ends in different ways.

Fig. 45 Repeats and Endings

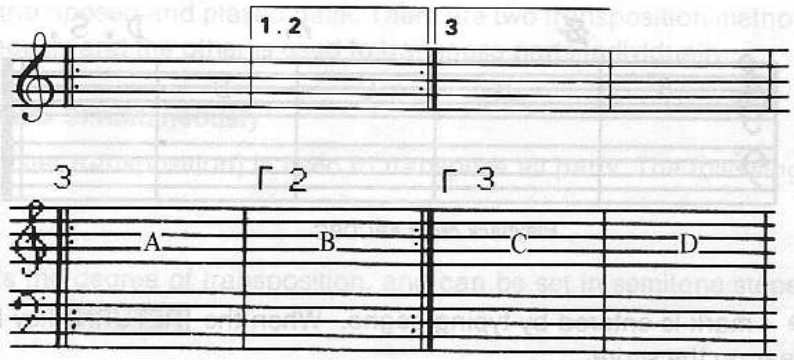


Playback order ABACD

(1) The bar number from which performance continues is entered in the form rpn = n. n is in the range of 1 to 255.

(2) Press the RETURN key to complete input. ⌐n will appear on the score, above the beginning of the repeated section.

Fig. 46 Example of Repeats with Endings and the Corresponding Screen Display

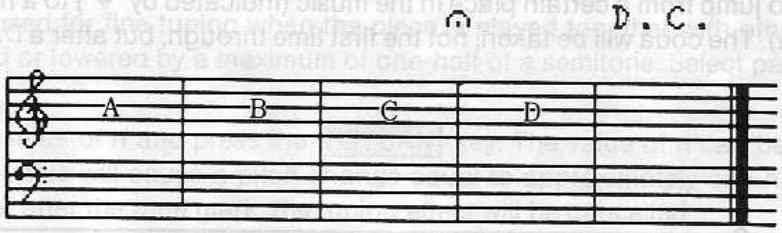


Playback order ABABACD

Da capo (D.C.)

The D.C. mark is used to repeat play from the beginning to a marked section in a piece.

Fig. 47 Da Capo



Playback order ABCDABC

Input of the D.C. mark will return performance to the beginning of a piece and stop play at the 𝄐 (fine) mark.

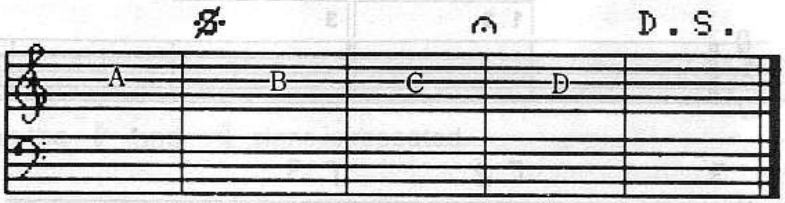
(1) When a return to the beginning of a piece is desired, enter dc from the command mode, and press the RETURN key. The D.C. mark will appear on the score.

(2) When termination of the performance is desired, enter fine and press the RETURN key. The 𝄐 mark will appear on the score.

Dal Segno

The D.S. mark is used instead of the D.C. mark to indicate the return of play to the marked section of a place rather than to the beginning. The mark is the segno 𝄋 . If termination of the performance of a piece is desired, enter fine in the same way as for da capo.

Fig. 48 Dal Segno



Playback order ABCDBC

(1) The segno 𝄋 mark is entered by typing segno. When the RETURN key is pressed, the 𝄋 mark will appear on the score.

(2) When a return to the 𝄋 mark is desired, type ds and press the RETURN key. The D.S. mark will appear on the score.

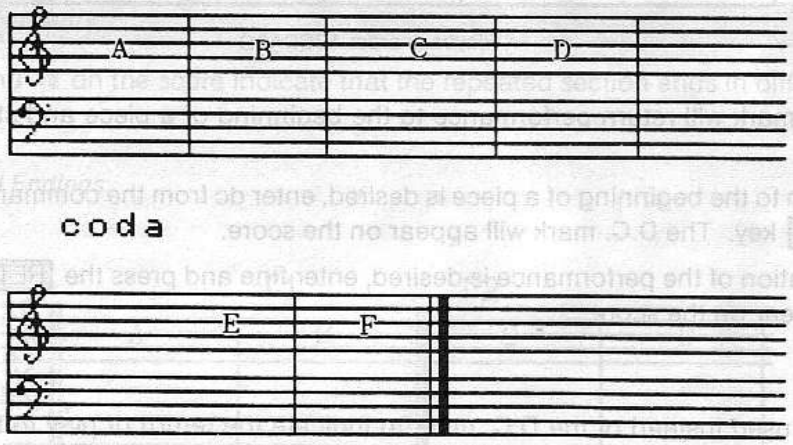
(3) When termination of play is desired, type fine and press the RETURN key. The 𝄐 mark will appear on the screen.

★ Playback will return to the beginning of the piece if the segno 𝄋 mark has not been input.

Coda

The coda is used to jump from a certain place in the music (indicated by 𝄌) to a new section of music (indicated by coda). The coda will be taken, not the first time through, but after a D.C. or D.S. has been encountered.

Fig. 49 Coda



Playback order ABCDABEF

(1) To input the 𝄌 sign, type in to coda and press the RETURN key. The 𝄌 mark will appear on the score.

(2) To input the coda mark, type in coda and press the RETURN key. The coda mark will appear on the score.

TRANSPOSING AND OTHER FUNCTIONS

Transposing

The score can be transposed and played back. There are two transposition methods: one transposes all parts simultaneously and the other is used to transpose parts individually.

Transposing All Parts Simultaneously

The mtra mark (master transposition) is used to transpose all parts. The following is entered in part 1:

```
mtra = n
```

The value of n sets the degree of transposition, and can be set in semitone steps over the range of −24 to 24.

Transposing Separate Parts

The tra mark is used to transpose individual parts. Select the part to be transposed and enter:

```
tra = n
```

The value of n sets the degree of transposition, and can be set in semitone steps over the range of −24 to 24.

Tune

The tune mark is used for fine tuning when the piece is played together with other instruments. The pitch can be raised or lowered by a maximum of one-half of a semitone. Select part 1 and enter:

```
tune = n
```

Input the required value of n and press the RETURN key. The value of n can be from −127 to 127 and the maximum value will cause a pitch change equal to approximately one-half of a semitone. If the mtra mark is set after the tune mark, the tuning effect will be cancelled.

Volume

Volume Setting

This parameter allows the overall volume of each part to be adjusted separately, and is useful for adjusting the balance between parts.

Enter:

```
vol = n
```

Select the part you wish to adjust, type vol = n, and press the RETURN key. n is in the range of 0 to 255. The volume is set at maximum when n is equal to 255.

The default volume of all parts is set to 255 when the power is first turned on.

The volume parameter does not affect the velocity, but simply adjusts the volume.

Changing the Volume

Volume can be changed for expression by entering the epu = n (volume up) or epd = n (volume down) commands. n is in the range of 0 to 16.

Sustain

To set the sustain, enter the sus = n command (n = 0 ~ 15).

Output Selection (Stereophonic Effect)

The FM Sound Synthesizer unit has stereo output jacks which allow voices to be assigned to the left output, right output, or both. Voices contained in the FM Sound Synthesizer are normally output from both the right and left output jacks. The following commands allow this to be changed.

outl	(output from only the left jack)
outr	(output from only the right jack)
outc	(output from both jacks)

These commands can be entered in the command mode for each part. These output selection commands are considered to be voice data, and so changing the voice data after the input of these commands will select the output jacks set by that voice (both L & R for built-in voices of the FM Synthesizer unit, and whichever output jacks were set for the voices created by the FM voicing Program).

ENTERING CHORDS

Setting the Chord Mode

The FM Music Composer II is normally operated with single notes in each part. The following procedure allows for simultaneous entry of up to eight notes per part (compound note mode). This is useful for the input of chords. The FM Sound Synthesizer unit is only capable of generating eight notes at one time, so the number of available parts will decrease by one for every note compounded in part 1. Even if the 3 notes appear just once, the "used up" parts cannot be accessed because the part is set in the *compound mode.*

The poly mark is entered at the beginning of a part to set it to the compound note mode. The poly mark is entered from the chord mode in the following form:

poly = n (n = 2 ~ 8)

The [F8] key can be used to input poly = and the number of compound notes is entered as n. The [RETURN] key is pressed to set the part to the compound note mode.

Compound notes are input using the compound note mode by the following procedure.

Entering Chords

The following procedure sets the notes which will be played back simultaneously.

The first step is to select the mark from the menu (by the menu cursor, mouse, or by pressing the [U] key). Subtract one note from the several notes to be played together and enter them in sequence (less the note subtracted) in this way. First, press the [U] key in note mode to set . When is set, the input notes will have a different shape, being displayed as .

Type the notes (except one) and release the mark by pressing [U] again. Then enter the remaining note. In the example shown below, is selected and C and E are entered. Next, is released and G is entered. The order in which the notes are input is not important.

Fig. 50 Compound Notes and Their Input

- Simultaneous performance of more notes than are set by the poly mark is not possible. Be sure not to exceed this number.
- Rests are not used in the polyphonic note input mode.

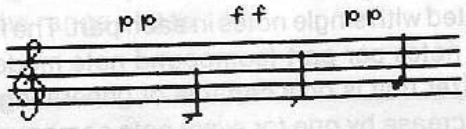
IMPORTANT:

The loop command and slur will not work when the chord mode is set.

Setting Dynamics

The reason notes are not displayed together on the score in the polyphonic note mode is that the dynamics of each individual note can be altered. The next illustration shows the procedure for emphasizing the quarter notes which make up the melody.

Fig. 51 Use of Dynamics Markings with Compounded Notes

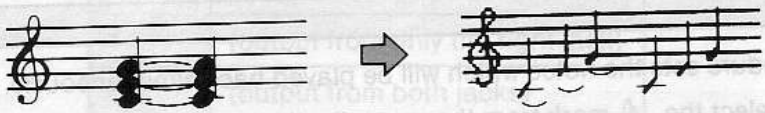


The ∧ and sfz marks are only effective for the note directly following the mark even if the notes happen to be compound.

Setting of Ties

The input of ties for compound notes is shown in the following diagram.

Fig. 52 Setting of Ties



Sustain

The sustain function can be used with parts set to the polyphonic note mode. The sound of single notes are cut off the instant the next note sounds, preventing the sustain function from operating. The polyphonic note mode must be used when the sustain effect is desired.

The sustain function is set from the command mode as follows.

sus = n (n = 1 ~ 15)

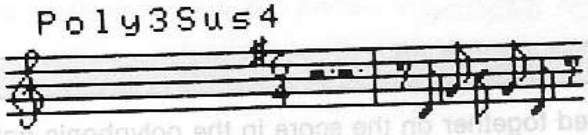
Type sus = n, and press the RETURN key. The smaller the value of n, the longer the sustain will last. Conversely, the larger n is, the shorter the sustain.

★ Input sus = 0 to release sustain.

Let us try adding sustain to the performance data for Listz's "Liebesträume" which was created in chapter 2.

The piece can be improved by adding sustain to part two. Switch to part 2 and type poly = 3 to set the part to the 3 note polyphonic mode. Try setting poly sustain by typing sus = 4. Now play back the piece.

Fig. 53 Input of the Sus Mark



Add sustain to the melody of part 1 in the same way. Input poly = 2 and sus = 5

LFO PARAMETERS

Changing LFO Parameters

The LFO (Low Frequency Oscillator) is an oscillator that generates low frequences which can be used to modulate pitch and amplitude, thereby creating vibrato and tremolo effects. There are various parameters which can be set independently for each voice. These are controlled by the following commands.

wf

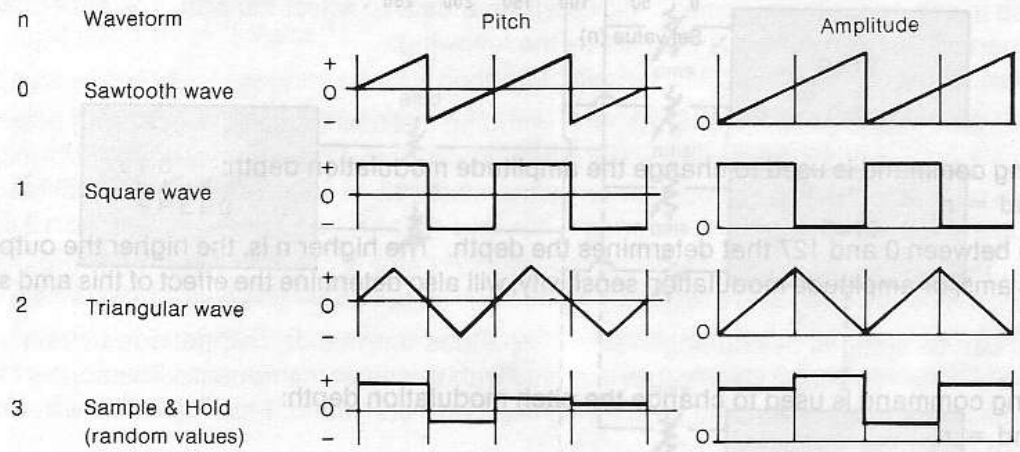
This command changes the waveform of the LFO (modifies the vibrato and tremolo effects)

The form is

wf = n

The waveform number, n, is entered after typing wf = . The value of n is from 0 to 3. The various waveforms corresponding to the values are shown below.

Fig. 54 Waveforms



lf (LF)

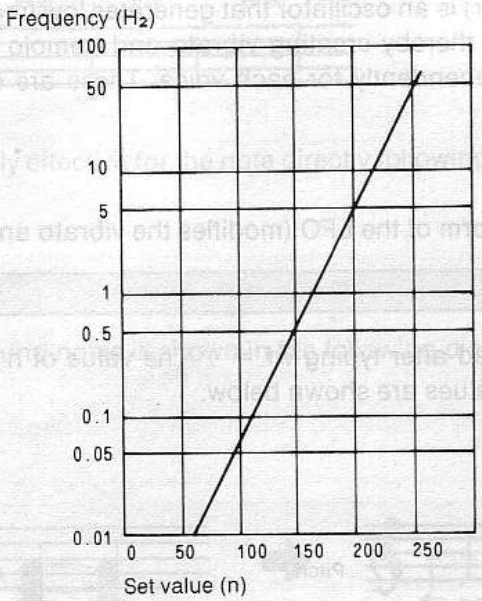
This command changes the rate (frequency) of the LFO. The frequency can be changed over an approximate range of 0.008Hz to 53Hz.

The form is

lf = n

where n is the value which determines the frequency. n can be between 0 and 255. The higher n is, the higher the frequency will become, and the faster the rate of modulation.

Fig. 55 Relationship between the Frequency and the Set Value



amd

The following command is used to change the amplitude modulation depth:

amd = n

n is a value between 0 and 127 that determines the depth. The higher n is, the higher the output level (the voice's ams, or amplitude modulation sensitivity, will also determine the effect of this amd setting.)

pmd

The following command is used to change the pitch modulation depth:

pmd = n

n is a value between 0 and 127 that determines the depth. The higher n is, the higher the output level (the voice's pms, or pitch modulation sensitivity, will also determine the audible effect of the pmd setting.)

★ These four commands (wf, lf, amd, and pmd) are used for setting all parts at the same time. If they are used on any one part, all of the other parts will be affected. Also, if the voice is changed after the input of these values, the newly set value will apply regardless of which part it was entered on. There are some voices which will not change (those with ams or pms values of zero).

ams

The following command is used to change the sensitivity of a part (voice) to amplitude modulation.

ams = n

n is a value between 0 and 3 that determines the sensitivity. The sensitivity is at the maximum level when n is 3.

pms

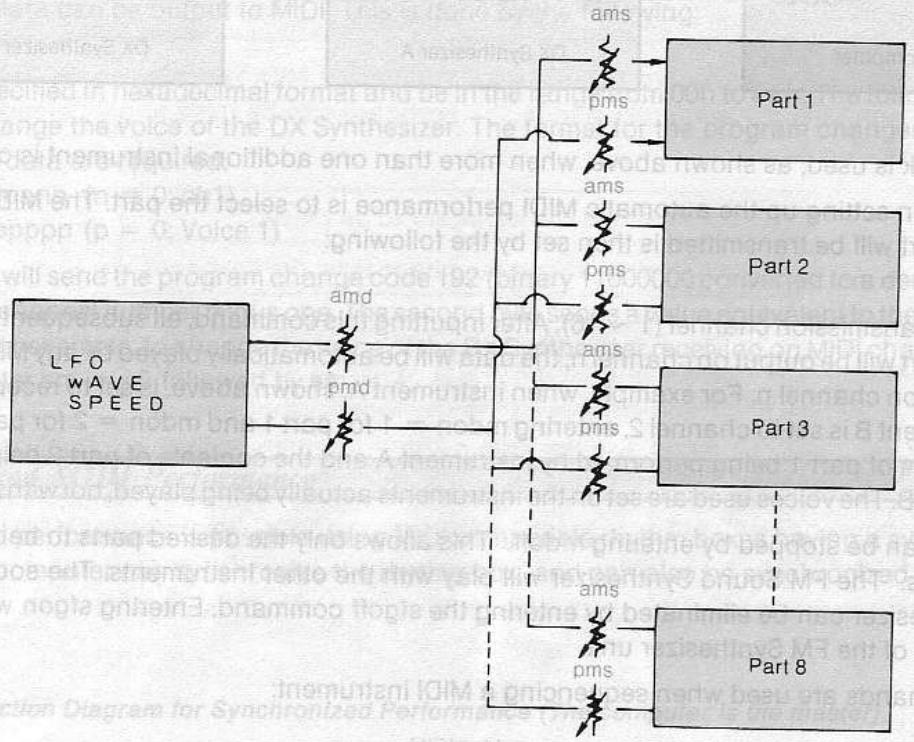
The following command is used to change the sensitivity of a part (voice) to pitch LFO.

pms = n

n is a value between 0 and 7 that determines the sensitivity. The sensitivity is at the maximum level when n is 7.

★ No pitch modulation can be applied when either pmd or pms is 0. This also applies to amd and ams.

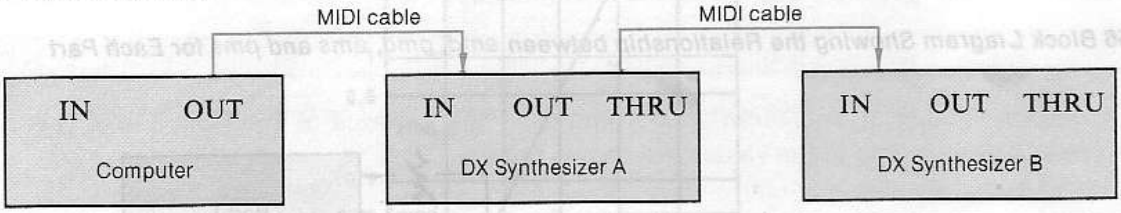
Fig. 56 Block Diagram Showing the Relationship between amd, pmd, ams and pms for Each Part



Automatic Sequencing of Other Instruments

Automatic sequencing (auto performance) of MIDI compatible instruments such as Yamaha's DX line of synthesizer etc., is possible with the FM Sound Synthesizer unit. Different instruments can be assigned to each part. The FM Sound Synthesizer and the other instruments are connected together by a MIDI cable (sold separately) as shown in the following diagram.

Fig. 57 MIDI Connection



The THRU jack is used, as shown above, when more than one additional instrument is connected.

The first step in setting up the automatic MIDI performance is to select the part. The MIDI channel on which that part will be transmitted is then set by the following:

mdon = n

n is the MIDI transmission channel (1 ~ 16). After inputting this command, all subsequent performance data of the part will be output on channel n; the data will be automatically played by any MIDI instrument set to receive on channel n. For example, when instrument A, shown above, is set to reception channel 1 and instrument B is set to channel 2, entering mdon = 1 for part 1 and mdon = 2 for part 2 will result in the contents of part 1 being performed by instrument A and the contents of part 2 being performed by instrument B. The voices used are set on the instruments actually being played, not with the computer.

MIDI output can be stopped by entering mdoff. This allows only the desired parts to be output on the MIDI channels. The FM Sound Synthesizer will play with the other instruments. The sound of the FM Sound Synthesizer can be eliminated by entering the sfgoff command. Entering sfgon will restore the sound output of the FM Synthesizer unit.

Several commands are used when sequencing a MIDI instrument:

mpc

To select a voice of the MIDI instrument, enter the mpc = n command (n = 1 ~ 128).

mvol

The mvol = n command (n = 1 ~ 127) is used to set the volume.

mportt

The mportt = n command (n = 1 ~ 127) sets the portamento time.

msus

To turn the MIDI sustain ON, enter msuson ; enter msusoff to turn it OFF.

mport

To turn ON the MIDI portamento, enter the mporton command; enter the mportoff command to turn t OFF.

msost

To switch the MIDI sostenuto ON or OFF, enter the msoston or msostoff command.

msoft

To switch the MIDI soft pedal ON or OFF, enter the msofton or msoftoff command.

sm

One byte of data can be output to MIDI. This is done by the following:

sm = n

n must be specified in hexadecimal format and be in the range from 00h to FFh. The following example s used to change the voice of the DX Synthesizer. The format for the program changes is as follows. Two bytes of data are required.

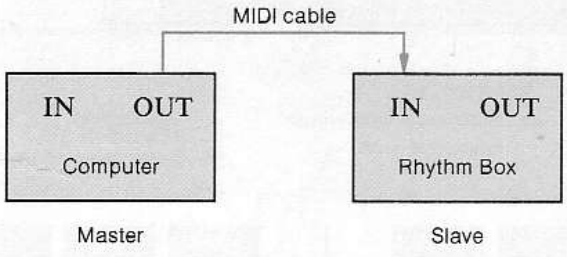
1100nnnn (n = 0; ch1)
0ppppppp (p = 0; Voice 1)

The first byte will send the program change code 192 (binary 11000000 converted to a decimal number) added to the channel number minus one. The second byte sends a value equivalent to the voice number minus one. For example, to change the voice of the DX Synthesizer receiving on MIDI channel 1 to voice number 5, enter sm = c0 followed by sm = 4.

Synchronized MIDI Performance

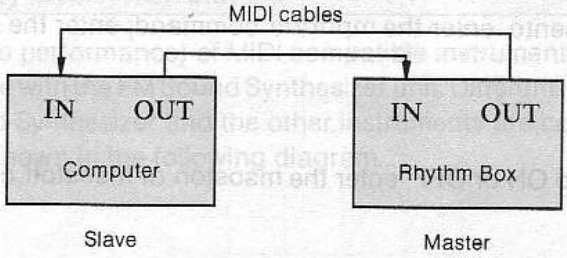
Synchronized performance is possible using MIDI compatible rhythm boxes having a synchronization eature. The computer can synchronize the rhythm box, and can also be synchronized by the rhythm box.

Fig. 58 Connection Diagram for Synchronized Performance (The computer is the master)



Enter the msst command at the beginning of part 1 and set the rhythm box to MIDI CLOCK. The rhythm box will start when you enter the play command and will stop at the end of the score. If you want the rhythm box to stop before the end of the score, enter the msoff command on the score.

Fig. 59 Connection Diagram for Synchronized Performance (The rhythm box is the master)



If you want the rhythm box to synchronize the computer, enter the msin command at the beginning of part 1. The computer will send an End-of-performance message at the end of the score.

Simultaneous Performance with an External Keyboard

Connect a Yamaha Music Keyboard (YK-01 or YK-10/20) or a MIDI keyboard to the FM Sound Synthesizer. By entering the following commands, the keyboard can be used to play along with the FM Music Composer II.

mkon	allows the keyboard to be played
mkoff	stops the performance from the keyboard

When it is desired to play from the keyboard, set one part aside for the keyboard and enter the mkon command in this part. The voice is determined by the values set for that part. A portion of a part can be used for the keyboard as well.

When entering the mkon command, use the form mkon = n, where the value n (between 0 and 255) determines the note volume (velocity). The higher the value of n, the higher the volume.

★ To play with the music keyboard only, enter the mplay command. To restore the FM Music Composer II function, type [CTRL] + [STOP].

★ The sfgon/off command turns the synthesizer unit sound generator system ON/OFF.

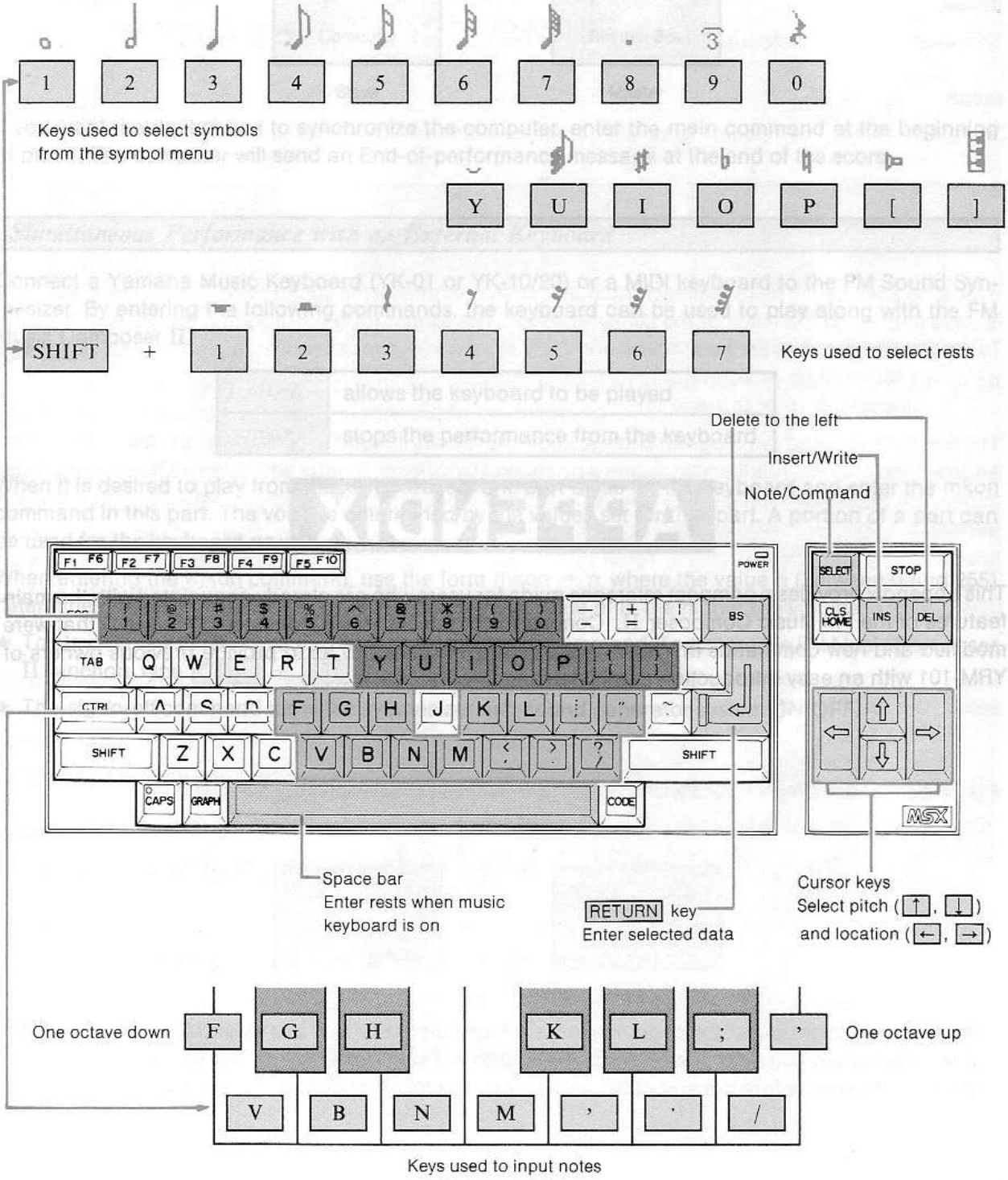
APPENDIX

This appendix provides a compact reference guide for users who are already acquainted with the main features of the FM Music Composer II. Commands of the FM Music Composer (YRM-101) that were modified and new commands in YRM-501 are clearly indicated so as to provide previous owners of YRM-101 with an easy introduction to this new version.

NOTE MODE

Keys Used in the Note Mode

Fig. 60 Key Used in the Note Mode



Difference between YRM-101 and YRM-501:

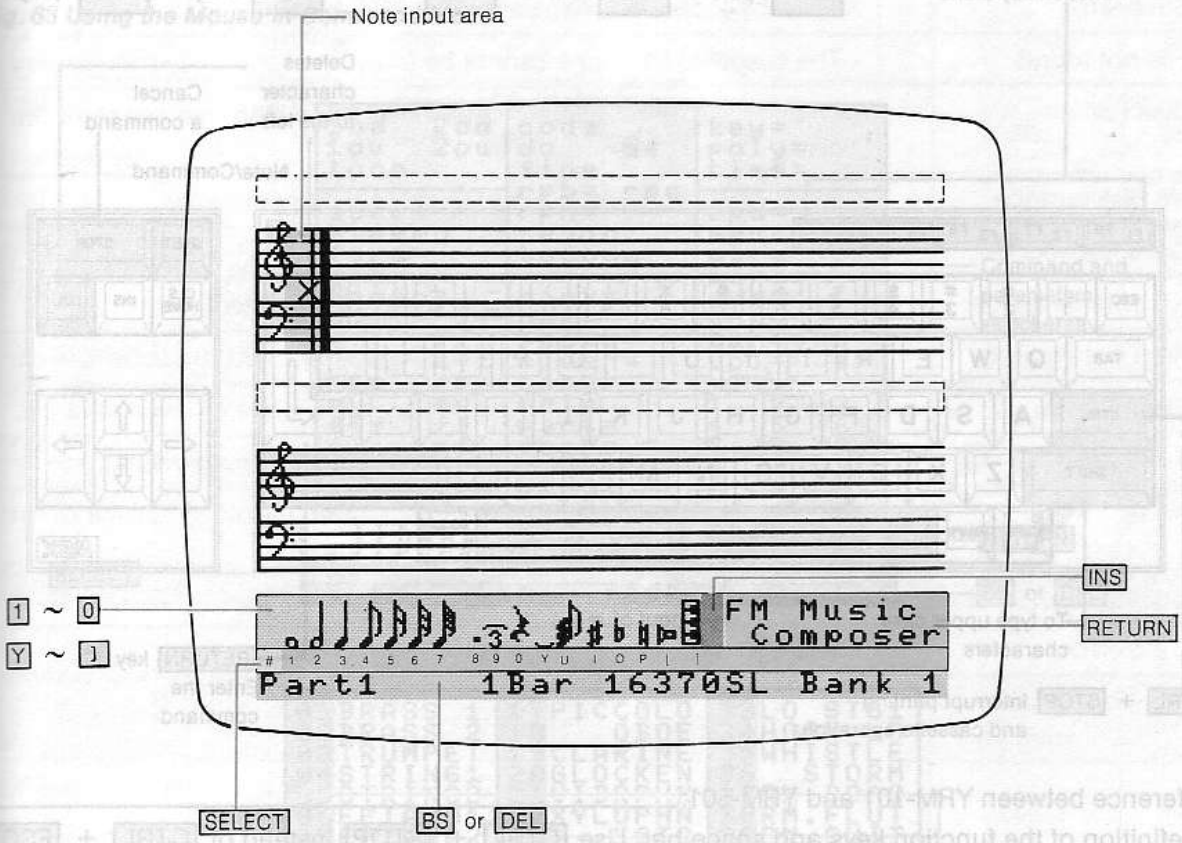
The [—], [=], and [\] keys are suppressed.

Using the Mouse in Note Mode

To move the mouse cursor (red arrow mark), just move the mouse accross a flat surface.

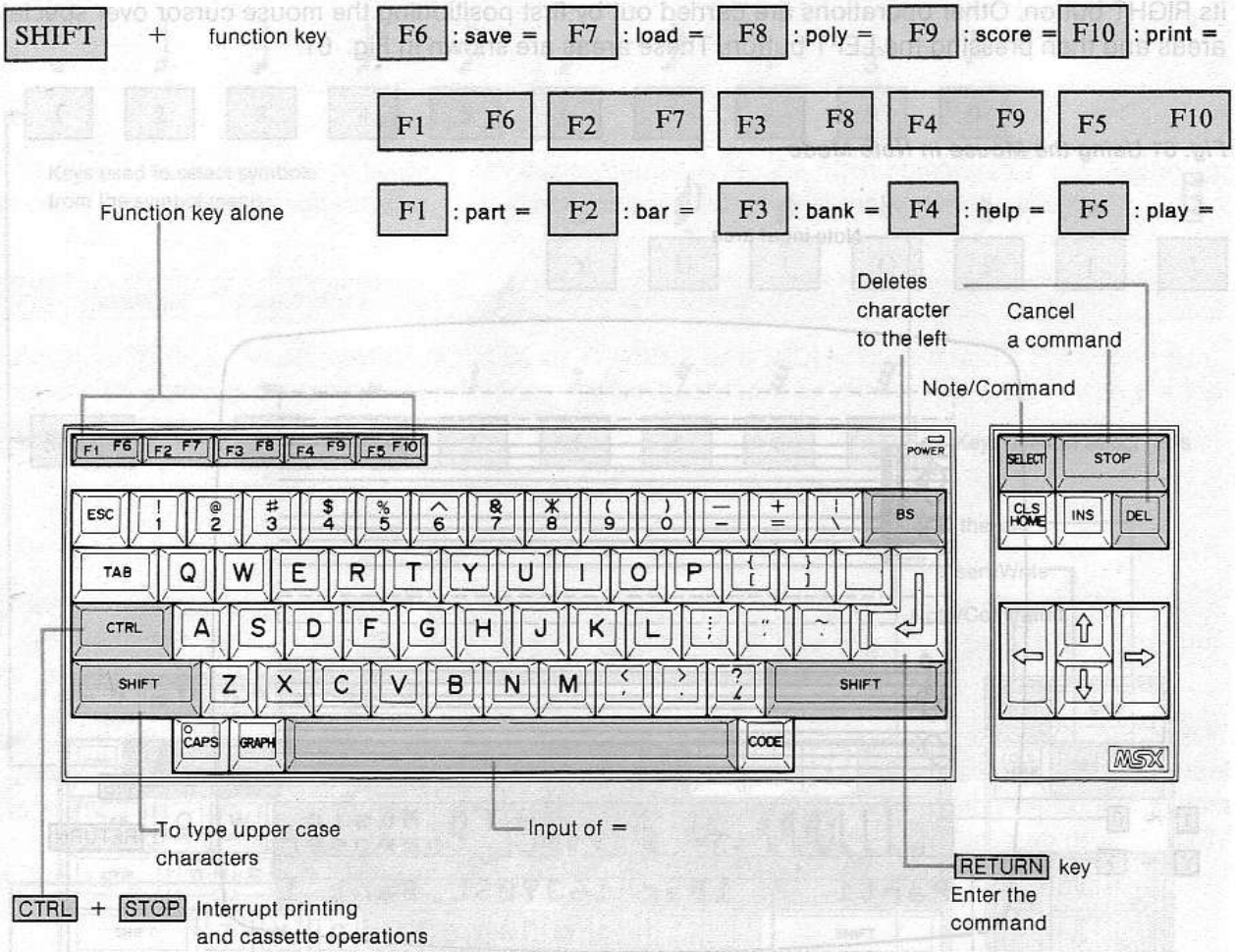
To move the score cursor horizontally, move the mouse to the right or to the left while holding down its RIGHT button. Other operations are carried out by first positioning the mouse cursor over special areas and then pressing the LEFT button. These areas are shown in Fig. 61.

Fig. 61 Using the Mouse in Note Mode



Keys Used in the Command Mode

Fig. 62 Keys Used in the Command Mode



Difference between YRM-101 and YRM-501:

Definition of the function keys and space bar. Use CTRL + STOP instead of CTRL + ESC to interrupt printing.

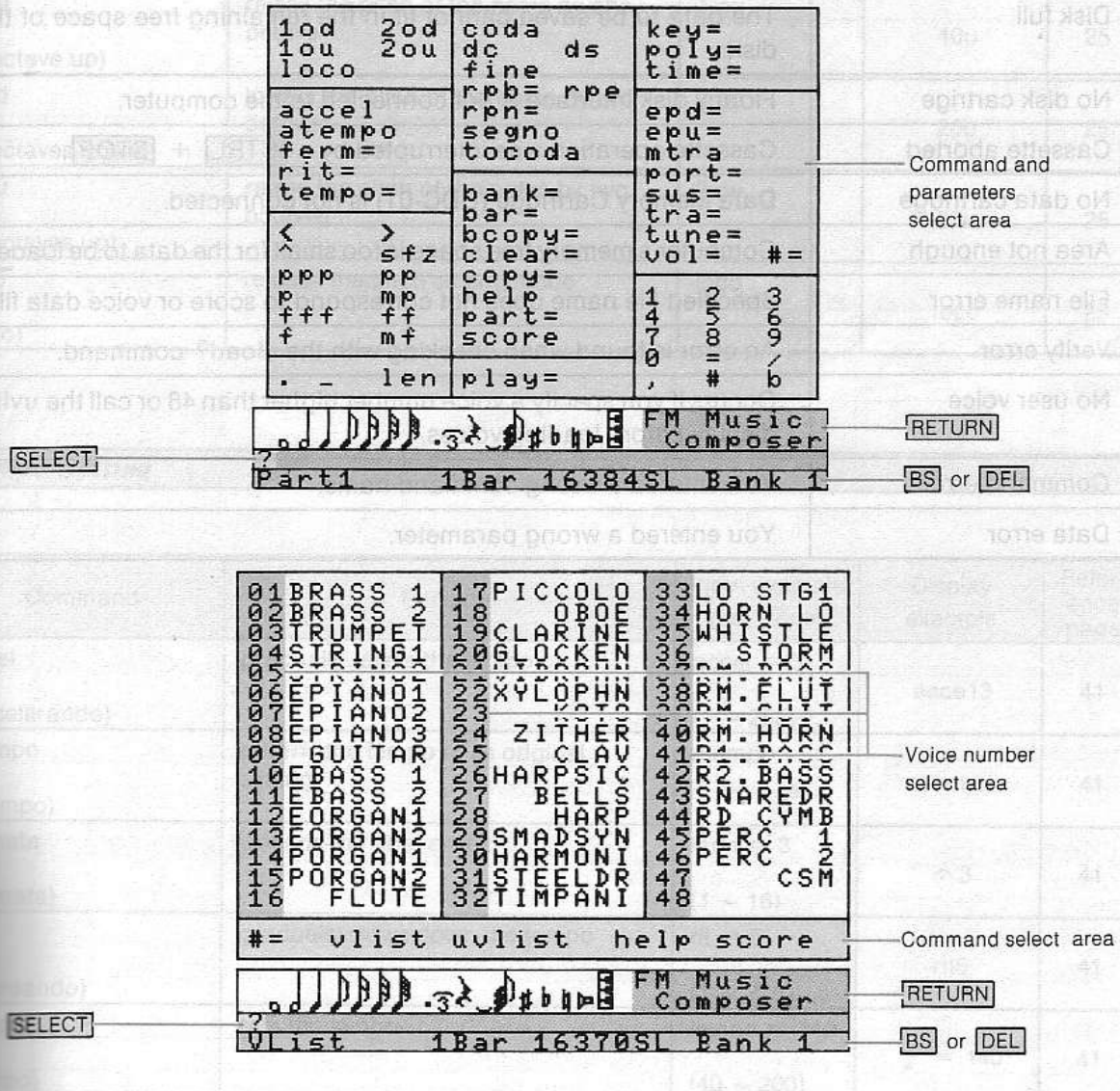
Using the Mouse in Command Mode

Pressing the mouse's RIGHT button when the system is in the command mode allows for switching between the two command menus and the normal score display.

To select a command, position the mouse cursor over the corresponding area of the command menu and press the LEFT button.

Other operations are carried out by first positionning the mouse cursor over special areas and then pressing the LEFT button. Fig. 63 shows these areas.

Fig. 63 Using the Mouse in Command Mode



ERROR MESSAGES

Error messages are displayed in the command area when something is wrong with the command you just entered. Here is a list of the error messages and their meaning.

Message	Meaning
Write protected	Saving data to floppy disk is impossible due to the setting of the write protection.
Drive not ready	Floppy disk drive is not set.
Load error	An error occured during loading.
Save error	An error occured during saving.
File not found	The specified file name cannot be found.
Disk full	The data to be saved cannot fit in the remaining free space of the disk.
No disk cartrige	Floppy disk interface is not connected to the computer.
Cassette aborted	Cassette operation was interrupted by a [CTRL] + [STOP].
No data cartridge	Data Memory Cartridge (UDC-01) is not connected.
Area not enough	Computer's memory free space is too small for the data to be loaded.
File name error	Specified file name does not correspond to score or voice data file.
Verify error	An error is found when checking with the cload? command.
No user voice	Occurs if you specify a voice number higher than 48 or call the uvlist display before loading voices.
Command error	You entered a wrong command name.
Data error	You entered a wrong parameter.

LIST OF COMMANDS AND THEIR DISPLAYS

The following is a complete list of commands, organized in the same way they appear on the command menu displays.
New commands (commands that are not supported by the YRM-101) are indicated on grey background.

Octave Setting

Command	Function	Input example (set value)	Display example	Reference page
1 od (1 octave down)	lowers the pitch of the notes by one octave	1 od	10d	25
1 ou (1 octave up)	raises the pitch of the notes by one octave	1 ou	10u	25
2 od (2 octaves down)	lowers the pitch of the notes by two octaves	2 od	20d	25
2 ou (2 octaves up)	raises the pitch of the notes by two octaves	2 ou	20u	25
loco (loco)	release the pitch setting mode	loco	loco	25

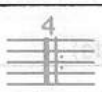
Tempo Setting

Command	Function	Input example (set value)	Display example	Reference page
accel (accelerando)	gradually raises the tempo	accel = 3 (1 ~ 255)	acce13	41
atempo (atempo)	returns the tempo to its original setting	atempo	atempo	41
fermata (fermata)	extends the note or rest	ferm = 3 (1 ~ 16)	𝄐3	41
rit (ritardando)	gradually slows down the tempo	rit = 5 (1 ~ 225)	rit5	41
tempo (tempo)	sets the tempo	tempo = 140 (40 ~ 200)	♩ = 140	41

Adjusting the Length of a Note

Command	Function	Input example (set value)	Display example	Refer-ence page
. (staccato)	sets the length of time that a note is played	. = 5 (1 ~ 16)	.5	42
– (tenuto)	sets the length of time for which the note will stop playing	– = 5 (1 ~ 16)	–5	43
len (length)	sets the length of time a note will play. has more control than the staccato method.	len = 100 (1 ~ 255)	L100	42

Repeat Signs

Command	Function	Input example (set value)	Display example	Refer-ence page
coda (coda)	designates part to where performance will jump to from 𝄌 mark	coda	coda	46
dc (da capo)	return to the beginning of the piece	dc	D.C.	45
ds (dal segno)	return to 𝄋 mark	ds	D.S.	45
fine (fine)	sets position of ending that follows repetition of sections marked with D.C or D.S.	fine		45
rpb (repeat begin)	sets beginning of section to be repeated and number of repetitions	rpb = 4 (2 ~ 255)		44
rpe (repeat end)	sets end of section to be repeated	rpe		44
rpn (repeat number)	sets endings 1 2 etc	rpn = 1 (1 ~ 255)	1	44
segno (segno)	sets position to return to with D.S. sign	segno	𝄋	46
to coda (to coda)	sets position to jump to coda from following repetition of sections marked with D.S. or D.C. signs	tocoda	𝄌	46

Utility Commands

Command	Function	Input example (set value)	Reference page
bank	sets bank to be edited	bank = 1 (1 – depends on computer capacity)	18
bar	sets bar to be displayed on screen	bar = 25 (1 – number of input bars)	32
bcopy	copies a specified bank to another specified bank	bcopy = 2, 1 (1 – depends on computer capacity)	35
clear	deletes data	clear = 2 (1 ~ 8, VOICE)	34
copy	copies performance data	copy = 1, 6, 8	35
help	displays command menus	help	28
part	selects part to be displayed on screen	part = 6 (1 ~ 8)	18
score	restore the score display	score	28

Simple Playback

Command	Function	Input example (set value)	Reference page
play	starts performance	play (1 ~ 8, t, m)	31

Key/Time Signature and Poly Settings

Command	Function	Input example (set value)	Display example	Reference page
key (key)	sets the key signature	key = 2 #		18
poly (poly)	sets polyphonic note mode	poly = 3 (2 ~ 8)	Poly3	49
time (time)	sets the time signature	time = 3/4		20

Performance Indications and Other Parameters

Command	Function	Input example (set value)	Display example	Reference page
epd	lowers the volume (expression)	epd = 1 (0 ~ 16)	Epd1	48
epu	increases the volume (expression)	epu = 1 (0 ~ 16)	Epu1	48
mtra (master transposer)	transposes all parts	mtra = 3 (−24 ~ 24)	M + 3	47
port	sets portamento speed	port = 20 (0 ~ 255)	Port20	43
sus (sustain)	sets sustain	sus = 5 (0 ~ 15)	Sus5	48
tra (transpose)	transposes individual parts	tra = 3 (−24 ~ 24)	+3	47
tune (tune)	fine tunes the pitch	tune = 30 (−127 ~ 127)	Tune + 30	47
vol (volume)	sets volume balance of each part individually	vol = 220 (0 ~ 255)	V220	47
# (number)	sets voice	# = 6 (1 ~ 96)	#6	27

Playback (various forms)

Command	Function	Input example (set value)	Display example	Reference page
aplay	automatic playback of the disk files	aplay	—	31
cplay	uninterrupted performance of the banks	cplay	—	31
mplay	set the system for performance on keyboard only	mplay	—	56
loop	start repeat performance	loop	—	31

File Commands

Symbol	Function	Input example (set value)	Display example	Reference page
cload	loading a file from cassette	cload = name (performance or VOICE)	—	29, 38
cload?	checking the last file saved on cassette	cload? = name (performance only)	—	37
csave	saving a file on cassette	csave = name (performance only)	—	37
dcload	loading a voice data file from memory cartridge	dcload = VOICE	—	29
files	displays the list of files saved on disk	files	—	30, 37
nfiles	displays next files	nfiles	—	30, 37
load	loading a file from disk	load = name (performance + .CMP or voice + .VOG)	—	29, 38
save	saving a file on disk	save = name (performance or voice)	—	37
uvlist	displays the list of loaded voices	uvlist	—	30
vlist	displays the list of internal voices	vlist	—	27

LFO Parameters

Command	Function	Input example (set value)	Display example	Reference page
amd	changes level of amplitude modulation	amd = 30 (0 ~ 127)	Amd30	52
ams	changes sensitivity to amplitude modulation independently for each part	ams = 3 (0 ~ 3)	Ams3	52
lf (LFO frequency)	changes frequency of LFO	lf = 200 (0 ~ 255)	LF200	51
pmd	changes level of pitch modulation	pmd = 30 (0 ~ 127)	Pmd30	52
pms	changes sensitivity to pitch modulation independently for each part	pms = 3 (0 ~ 7)	Pms3	53
wf (waveform)	changes waveform of LFO	wf = 2 (0 ~ 3)	WF2	51

Sequencing a MIDI Instrument

Command	Function	Input example (set value)	Display example	Refer-ence page
mdon (MIDI on)	starts output of performance data to MIDI terminal and sets transmission channel	mdon = 1 (1 ~ 16)	MDon1	54
mdoff (MIDI off)	stops output of performance data to MIDI terminal	mdof	MDoff	54
mpc	select a voice of the MIDI instrument	mpc = 12 (1 ~ 128)	MPc12	54
sm (send MIDI)	outputs one byte of data to MIDI instrument	sm = 192	Sm192	55
mportt	set the MIDI portamento time	mportt = 120 (1 ~ 127)	MPortt120	54
mport	turns MIDI portamento ON/OFF	mporton mportoff	MPorton MPortoff	55
msoft	turns the MIDI soft pedal ON/OFF	msofton msoftoff	MSofton MSoftoff	55
msost	turns the MIDI sostenuto ON/OFF	msoston msostoff	MSoston MSostoff	55
msus	turns the MIDI sustain ON/OFF	msuson msusoff	MSuson MSusoff	54
mvol	set the MIDI volume	mvol = 10 (1 ~ 127)	MVol10	54

Synchronized Performance

Command	Function	Input example (set value)	Display example	Refer-ence page
msin	starts synchronization of the computer by a rhythm machine	msin	MSin	56
msoff (MIDI sync off)	stops transmission of synchronization signals from MIDI terminal	msoff	MSoff	55
msst (MIDI sync start)	starts MIDI synchronization	msst	MSst	55

Output Jack Control

Command	Function	Input example (set value)	Display example	Reference page
outc (out center)	sets output to both left and right jacks	outc	OutC	48
outl (out left)	sets output to left jack	outl	OutL	48
outr (out right)	sets output to right jack	outr	OutR	48

Music Keyboard and Synthesizer Unit Control

Command	Function	Input example (set value)	Display example	Reference page
sfg	turns voice generation system of FM Sound Synthesizer ON/OFF	sfgon sfgoff	SFGon SFGoff	56
mk	allows performing on music keyboard	mkon = 200 (0 ~ 255)	Mkon200	56
mkoff	prevents performing on music keyboard	mkoff	Mkoff	56

Print-out Setting

Command	Function	Input example (set value)	Display example	Reference page
printer	declares the printer type and sets the print mode	printer = MSX A, EPSON B, C		36
print	prints the scores on paper (printer)	print = 6, 8		36

Dynamic Markings

Command	Function	Input example (set value)	Display example	Reference page
< (crescendo)	gradually increases volume	< = 5 (1 ~ 255)	< 5	40
> (decrescendo)	gradually decreases volume	> = 5 (1 ~ 255)	> 5	40
^ (accent)	emphasizes only one note (relative value)	^ = 20 (1 ~ 255)	^20	40
sfz (sforzando)	emphasizes only one note (absolute value)	sfz = 100 (1 ~ 255)	sfz100	40
ppp (pianississimo)	very, very quiet	ppp (1 ~ 255)	ppp	39
pp (pianissimo)	very quiet	pp (1 ~ 255)	pp	39
p (piano)	quiet	p (1 ~ 255)	p	39
mp (mezzo piano)	moderately quiet	mp (1 ~ 255)	mp	39
mf (mezzo forte)	moderately loud	mf (1 ~ 255)	mf	39
f (forte)	loud	f (1 ~ 255)	f	39
ff (fortissimo)	very loud	ff (1 ~ 255)	ff	39
fff (fortississimo)	very, very loud	fff (1 ~ 255)	fff	39

MIDI IMPLEMENTATION CHART

[MSX Music Application Software] Date : 9/21.1985
FM music composer II MIDI Implementation Chart Version : 1.00

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	x	All	MkOn,mplay
	Changed	1-16	x	MdOn
Mode	Default	3	1	
	Messages			
	Altered	**********	x	
Note Number		13 - 108	36 - 84	20d ... 20u
	True voice	**********		
Velocity	Note ON	o 9nH,v=1-127	o v=1-127	mplay
	Note OFF	x 9nH,V=0	x	
After Touch	Key's	x	x	
	Ch's	x	x	
Pitch Bender		x	x	
Control Change		o (5)	x	MPortT
		(7)		MVol
		(64)		MSus
		(65)		MPort
		(66)		MSost
		(67)		MSoft
Prog Change		o	x	MPc
	True #	**********		
System Exclusive		x	x	
System Common	Song pos	x	x	
	Song sel	x	x	
	Tune	x	x	
System Real Time	Clock	o	o	MsSt,MsIn
	Commands	o	o	No FBh
Aux	Local ON/OFF	o	o	MdOn,MkOn,mplay
	All Notes OFF	o	x	with Sus off
Mes-sages	Active Sense	x	x	
	Reset	x	x	
Notes		Sm : Transmitted 1 byte data		

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