

SONY[®]

PERSONAL COMPUTER

HB-G900P

HOW TO USE THE VIDEO UTILITY

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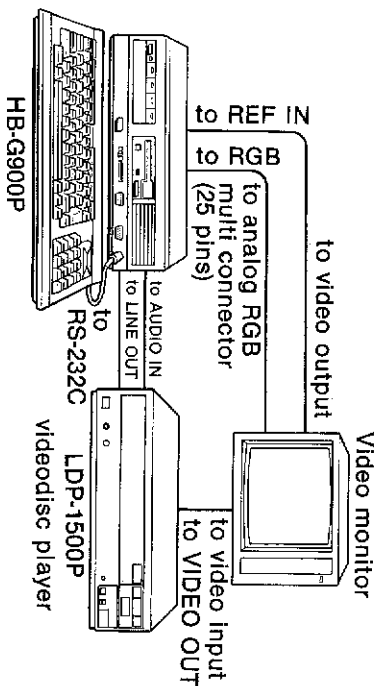
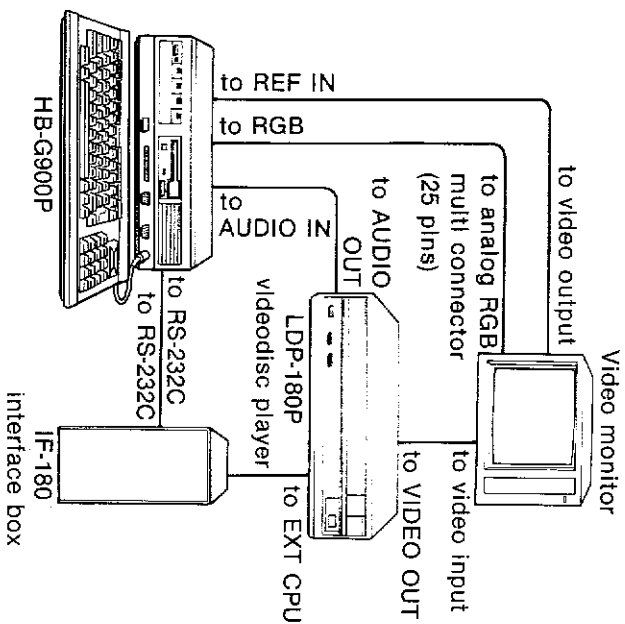
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Video Utility is a software already built into the HB-G900P personal computer in the form of ROM. It provides extended commands of MSX2-BASIC to enable the control of Sony LDP-180P/LDP-1500P videodisc player. It also provides extended commands for displaying four types of characters, which may be useful for creating titles or adding information to the picture from the videodisc player.

This manual explains the commands which are contained in the Video Utility. The sample program at the end of the manual will help you to get a general idea on how to control a videodisc player with a computer. The supplied disk which contains the font data is used along with the Video Utility commands for character display. Please read this manual thoroughly and retain it for future reference. For additional information on the HB-G900P, the videodisc player or other hardware items, refer to respective manuals.

This software can be used only with Sony LDP-180P or the LDP-1500P videodisc player.

SYSTEM CONFIGURATION



Notes on the monitor

- If you are using a monitor or a TV with an analog RGB multi connector of 21 pins, connect the VIDEO OUTPUT of the LDP-180P/LDP-1500P with the REF IN of the HB-G900P and set the monitor select switch of the HB-G900P to PERI-TV.
- If you are using a monitor with an analog RGB multi connector of 25 pins, set the monitor select switch of the HB-G900P to PVM.

Notes on RS-232C cable

- If you are using a Sony's RS-232C cable (for example, SMK-0031) or other straight RS-232C cable, set the signal direction select switch of the HB-G900P to TO TERM.
 - If you are using a cross RS-232C cable, set the signal direction select switch to TO MODEM.
- If you do not know which type your RS-232C cable is, set the signal direction switch to either TO MODEM or TO TERM and send the LDPINIT command. If the computer does not return "Ok", set the switch to the opposite.

Notes on IF-180/LDP-1500P

- The AUTO REPEAT switch of the IF-180/LDP-1500P must be set to ON.
- The BAUD RATE selector on the IF-180/LDP-1500P must be set to 1200 or 2400.

Notes on the disc

- Use only the CAV discs. The LDP-180P/LDP-1500P cannot be controlled by the HB-G900P when a CLV disc is used.


* Refer to the instruction manual of each hardware item for information on requirements and the connecting procedure.

BACKUP PROCEDURE

As a precaution against accidental erasure of the supplied disk, you should make a backup copy using a double-sided 3 1/2-inch micro floppydisk. Work with the backup copy and keep the original disk in a safe place.

To make a backup copy, you must first format the disk.

FORMATTING PROCEDURE

- 1 Turn on the power or press the RESET button of the computer to activate MSX-Disk BASIC.
- 2 Type in CALL FORMAT (or _FORMAT) and hit .
- 3 The following message appears:

Drive name? (A,B)

Press **A** or **B** to specify the drive into which the disk to be formatted is to be inserted.

The following message appears:

- 1 - Single sided, 9 sectors
- 2 - Double sided, 9 sectors

- 4 Select 2 since a double-sided disk is being used. The following message appears:

Strike a key when ready

- 5 Insert the disk to be formatted in the specified drive and press any key on the keyboard to start the formatting operation.

When formatting is completed, the following message appears:

Format complete

Ok

This message indicates the computer is ready for the next command.

Now that the disk is formatted, you are going to copy what is on the original disk to the newly formatted disk.

COPYING PROCEDURE

When there is only one disk drive

- 1 Insert the original disk in the disk drive and execute the following command:

```
COPY "A: *.*" TO "B:"
```

The following message appears:

```
Insert diskette for drive B: } -- (a)
```

- 2 Remove the original disk from the disk drive, insert the disk which you have just formatted, and strike a key.

The following message appears:

```
Insert diskette for drive A: } -- (b)
```

- 3 Remove the new disk, insert the original disk and strike a key.
- 4 When the message (a) appears again, insert the new disk and when the message (b) appears, insert the original disk. Repeat this process until "Ok" appears on the screen, which indicates that the copying has been completed.

When there are two or more disk drives

Insert the original disk into drive A and the new disk which you have just formatted into drive B and execute.

```
COPY "A: *.*" TO "B:"
```

When "Ok" appears, the copying has been completed.

You can specify other drive names instead of drive A and drive B. In this case specify the drive name for the original disk in place of drive A and the drive name for the new disk in place of drive B.

LIST OF COMMANDS IN THE VIDEO UTILITY

When the power of the HB-G900P is turned on, MSX-Disk BASIC and the extended commands of the Video Utility are automatically activated. All of the extended commands can be executed with the CALL command.

The CALL command (as in CALL LDPINIT) can be abbreviated by using an underline “_” (as in _LDPINIT). In the following pages, the abbreviated form (_) will be used.

When executing the commands for character display, the backup copy of the supplied disk containing the font data must be inserted beforehand.

Here is the list of commands contained in the Video Utility:

Commands for controlling the LDP-180P/LDP-1500P videodisc player

- __INDEXON: Displays the frame number or chapter number on the screen.
- __INDEXOFF: Erases the frame number or chapter number displayed from the screen.
- __LDPCONT: Resumes suspended playback of the videodisc player.
- __LDPCSRCH: Searches for the beginning of the specified chapter.
- __LDPSTART: Starts playback of the specified chapter.
- __LDPEND: Suspends the execution of a program.
- __LDPFRM: Obtains the current frame number.
- __LDPINIT: Initializes the communication line.
- __LDPOUT: Sends one-byte data to the videodisc player.
- __LDPPAUSE: Suspends playback of the videodisc player.
- __LDPSSRCH: Searches for the specified frame.
- __LDPSTART: Plays back the specified scene.
- __LDPSTAT: Reads the status of the videodisc player.
- __LDPSTOP: Stops playback of the videodisc player.
- __LDPWAIT: Suspends the execution of a program.

Commands for displaying graphics or characters on the screen

- __GLOAD: Loads the picture data of the compressed format.
- __SLFONT: Selects the type face of the alphanumeric characters.
- __TEXT: Displays the alphanumeric character string on the screen.

Others

- __ASW: Controls the audio output of the computer
- __ESCON: Enables ESC key interrupt
- __ESCOFF: Disables ESC key interrupt
- __VSW: Changes the display on the monitor screen

TEST OPERATION

Let's try some of the commands in the Video Utility. If you wish to superimpose the picture of the HB-G900P over the picture from the videodisc player, you must first execute SET VIDEO command of MSX2-BASIC. See the Programming Reference Manual for details.

Here, you are going to superimpose the picture of the HB-G900P over the picture from the videodisc player. Execute

```
SET VIDEO 2,,1,3,1
```

Then execute

```
_LDPINIT
```

This command must be executed first to initialize the communication line between the HB-G900P and the LDP-180P/LDP-1500P.

Then execute

```
_INDEXON
```

The `_INDEXON` is a command for displaying the index on the screen.

After the index is displayed on the screen, execute

```
_LDPSTART(1000,3000)
```

You can see that the playback starts in the normal speed mode from frame number 1000 and ends at frame number 3000.

All the Video Utility commands will be explained in detail in the following section.

If any error message appears, turn to page 44 for explanation on the error messages and make the necessary correction. Here are some of the check points:

- Is the signal direction select switch of the HB-G900P properly set?
- Is the RS-232C cable properly connected?
- Has the `_LDPINIT` command been executed?
- Is the BAUD RATE selector on the IF-180 or LDP-1500P properly set?
- Is there a disc on the disc table of the videodisc player?
- Is the disc on the disc table labeled CAV?

EXPLANATION OF COMMANDS

This section explains in detail each of the commands included in the Video Utility. The commands are arranged in alphabetical order and are explained as shown below.

Command name
Function

Format

Explains the format and proper syntax of the command. Parameters in () are required operands. Parameters in [] may be omitted. When writing these, brackets are not required.

Application

Explains how to write and use the commands and how they function.

__ASW

Controls the audio output of the computer.

Format

__ASW (channel)

Cond.

- 0 = right and left channels off
- 1 = right channel on
- 2 = left channel on
- 3 = both channels on

Application

This statement controls the audio output of the computer.

__ESCOFF

Disenables ESC key interrupt.

Format

__ESCOFF

Application

The statement **__ESCOFF** disables the ESC interrupt. After this statement has been executed, pressing the ESC key will not send interrupt signals to the communication line. To escape from a communication error, press the RESET button of the computer.

__ESCON

Enables ESC key interrupt.

Format

__ESCON

Application

The **__ESCON** statement enables the ESC interrupt. The ESC interrupt allows users to send an interrupt signal to the communication line. The ESC key is used to escape from a communication error.

__GLOAD

Loads the picture data of the compressed format.

Format

__GLOAD (filename, array variable [, [X-coordinate] [, [Y-coordinate] [, [width] [, [height]]]]])

Filename

Cond.

String constant, variables, array variables

Array variable

Cond.

Integer type

The array must be declared in advance in a DIM statement in order to set up the necessary area in the memory for working area.

The size must be 800 or larger.

X-coordinate

Cond.

SCREEN 7

Numeric constant, variables, array variables or their

expressions, $0 \leq X\text{-coordinate} \leq 511$

SCREEN 8

Numeric constant, variables, array variables or their

expressions, $0 \leq X\text{-coordinate} \leq 255$

0 is specified.

Numeric constant, variables, array variables or their

expressions, $0 \leq Y\text{-coordinate} \leq 211$

0 is specified.

SCREEN 7

Numeric constant, variables, array variables or their

expressions, $0 \leq \text{width} \leq 511$

SCREEN 8

Numeric constant, variables, array variables or their

expressions, $0 \leq \text{width} \leq 255$

SCREEN 7

511 is specified.

SCREEN 8

255 is specified.

Numeric constant, variables, array variables or their

expressions, $0 \leq \text{height} \leq 211$

211 is specified.

Height

Cond.

SCREEN 7

Numeric constant, variables, array variables or their

expressions, $0 \leq \text{height} \leq 211$

211 is specified.

Application

Loads a picture file of the compressed format on a floppydisk.

Note The screen mode must be 7 or 8.

CLEAR 100, &H DD00 must be executed before this statement.

__INDEXOFF

"call index off"

Erases the index from the screen.

Format

__INDEXOFF

Application

This command erases the index which has been displayed with the __INDEXON command.

__INDEXON

"call index on"

Displays the index on the screen.

Format

__INDEXON

Application

This command displays the present frame number, the playback mode, etc.

__LDPCONT	"call LDP continue"
Resumes suspended playback of a videodisc player.	

Format
__LDPCONT

Application

A __LDPCONT statement restarts the playback of a videodisc player that has been suspended with a __LDPPAUSE statement.

__LDPCSRCH	"call LDP chapter search"
Searches for the beginning of the specified chapter.	

Format
__LDPCSRCH (chapter number)

Chapter number **Cond.** Numeric constant, variables, array variables or their expressions,
0 ≤ chapter number ≤ 79

Application

The __LDPCSRCH statement searches for the first frame of the specified chapter and displays that frame.

Note If chapter numbers are not recorded on the videodisc player, an error occurs.

__LDPCSTART

"call LDP chapter start"

Starts playback of the specified chapter.

Format

__LDPCSTART (chapter number [, [speed mode] [, count number]])

Chapter number **Cond.** Numeric constant, variable, array variables or their expressions.

Speed mode **Cond.** $0 \leq \text{chapter number} \leq 79$

Numeric constant, variable, array variables or their expressions.

Cond. $0 \leq \text{speed mode} \leq 2$

Omit! 0 (normal speed) is specified.

Count number **Cond.** Numeric constant, variable, array variables or their expressions.

Cond. $1 \leq \text{count number} \leq 8$

Omit! 1 is specified.

Application

The **__LDPCSTART** statement searches for the beginning of the chapter specified with "chapter number". When playback of the specified chapter is completed, a still picture is displayed.

Specification of the speed mode

The playback speed can be specified with the parameter "speed mode".

Speed mode	Playback speed
0	normal
1	fast ($\times 3$)
2	slow ($\times 1/5$)

To repeatedly playback the chapter

If a "count number" parameter is included, the specified chapter of the disc is played back as many times as specified in "count number".

Example

__LDPCSTART(4 , , 3)

Plays back chapter 4 three times at the normal playback speed.

__LDPEND

"call LDP end"

Holds the execution of a program until the playing of the particular video frame/chapter specified by a __LDPSTART/ __LDPSTART statement is completed.

Format

__LDPEND [(numeric)]

Numeric **Cond.** 0 = No interrupt.

Holds the execution of a program until the playing of the particular video frame/chapter specified by a __LDPSTART/ __LDPSTART statement is completed.

- 1 = Return key is defined to be the interrupt. Holds the execution of a program until the playing of a particular video frame/chapter specified by a __LDPSTART/ __LDPSTART statement is completed or the return key is pressed.
 - 2 = Similar to 1 except that the interrupt key is the switch on the device connected to the CONTROLLER A.
 - 3 = Same as 2 except CONTROLLER B is used.
- Omit**
1 is specified.

Application

This statement suspends the program execution until the playing of the videodisc player, which was started by a __LDPSTART or __LDPSTART statement, is completed. The program execution is then transferred to the next statement.

Example

```
10 __LDPSTART(3,1)
20 __LDPEND
30 PRINT "PLAY END"
```

When this program is executed, the disc is played back at the normal speed, starting at the beginning of chapter 3 and ending at the end of the chapter 3. The execution of the program is suspended until the end of chapter 3 is accessed, and then "PLAY END" is displayed on the screen.

If line 20 is omitted, the display "PLAY END" will appear right after the playing of chapter 3 is started.

__LDPFRM

“call LDP frame”

Obtains the current frame number and assigns it to a single or double precision variable.

Format

__LDPFRM (frame)

Frame: Single or double precision variable.

Application

Any single or double precision variable can be specified in this command.

When this command is executed, the frame number accessed at that time is assigned to the specified variable.

Example

If execution of

```
__LDPFRM ( F )  
PRINT F
```

displays 30000 on the screen, it means that frame 30000 is now being played back.

__LDPINIT

“call LDP Initialize”

Initializes the communication line between the computer and the videodisc player.

Format

__LDPINIT [(baud rate)]

Baud rate **Cond.** 0 = 1200 bps

1 = 2400 bps

Omit 0 is specified.

Application

This command initializes the communication line between the HB-G900P and the videodisc player.

This command must be executed first when controlling the videodisc player with the HB-G900P.

This command must be executed again if the power of either the computer or the videodisc player or both is turned off.

Baud rate specification

Specify 0 or 1 according to the baud rate setting of the videodisc player.

The baud rate setting of the videodisc player can be checked by the DIP switch on the videodisc player.

Notes

- In order to transfer control of the videodisc player from the HB-G900P to the player itself, turn off the power of the videodisc player and turn it on again.
- This command must be executed again every time the execution of a program is interrupted by pressing the **[ESC]** key.

LDPPOUT

"call LDP commands out"

Sends one-byte data to the LDP-180P/LDP-1500P.

Format

LDPPOUT (command code)

Command code **Cond.** Numeric constant, variables, array variables or their expressions,
48(&H30) ≤ command code ≤ 117(&H75).

Application

This command sends an RS-232C command to the videodisc player by specifying the corresponding code.

The RS-232C command codes are listed in the table below.

The codes are in the hexadecimal notation. "H" indicates the upper four bits and "L" indicates the lower four bits.

Using this table, you can find, for example, the RS-232C command "FWD-PLAY" has the code of "&H3A".

H	2	3	4	5	6	7
L						
0	0	ENTER	INDEX ON			
1	1	C.E.	INDEX OFF			
2	2	MENU			MOTOR ON	
3	3	SEARCH			MOTOR OFF	
4	4	REPEAT				EJECT ENABLE*
5	5			FRAME MODE		EJECT DISABLE*
6	6	CH-1 ON		C.L.		
7	7	CH-1 OFF				
8	8	CH-2 ON				
9	9	CH-2 OFF				
A	*EJECT	FWD-PLAY	REV-PLAY			
B		FWD-FAST	REV-FAST			
C		FWD-SLOW	REV-SLOW			
D		FWD-STEP	REV-STEP			
E						
F		STOP	STILL			

*These command codes can be used only with the LDP-1500P.

The function of the RS-232C commands are basically the same as the functions of keys on the videodisc player remote control unit. For details about the key function, refer to the instruction manual of the videodisc player.

Example

Execution of

LDPPOUT (&H3A)

sets the videodisc player in the normal forward playback mode.

Notes

- After sending the MOTOR OFF (&H63) command, do not send any other command except the MOTOR ON (&H62) or MOTOR OFF (&H63) command.
- The LDPPOUT command is used for executing the commands which are not included in the Video Utility. For example, the following shows a program that repeats the playback from the current frame to frame 1000 in the fast forward mode twice.

```
10 READ CODE%
20 IF CODE%=0 GOTO 50
30 LDPPOUT(CODE%)
40 GOTO 10
50 LDPEND
60 DATA &H44, &H31, &H30, &H30, &H30, &H30, &H3B, &H40,
   &H32, &H40, &H0
```

__LDPPAUSE

"call LDP pause"

Suspends playback of the videodisc player.

Format

__LDPPAUSE

Application

The **__LDPPAUSE** statement suspends playback at the current frame and obtains a still picture of that frame.

Use the **__LDPCONT** statement to restart playback.

__LDPSRCH

"call LDP search"

Searches for the specified frame.

Format

__LDPSRCH (frame number)

Frame number **Cond.** Numeric constant, variables, array variables or their expressions, 1 ≤ frame number ≤ 54000.

Application

This command searches for the frame specified by the frame number and displays a still picture of that frame.

Example

When

__LDPSRCH(5000)

is executed, frame 5000 is searched for and its still picture is displayed.

Note The execution of the **__LDPSRCH** command when the HB-

G900P is connected to the videodisc player may cause a slight lateral movement of the picture when the videodisc player enters and exits the search mode.

__LDPSTART	"call LDP start"
Plays back the specified scene.	

Format

__LDPSTART ([frame number 1], frame number 2, [speed mode] 1, [count number] 1)

Frame number

Cond. Numeric constant, variable, array variables or their expressions,
 $0 \leq$ frame number \leq 54000.

Omit

Current frame is specified

Speed mode

Cond.

Numeric constant, variables, array variables, or their expressions,
 $0 \leq$ speed mode \leq 2.

Omit

0 is specified.

Count number

Cond.

Numeric constant, variable, array variables or their expressions,
 $1 \leq$ count number \leq 8

Omit

1 is specified.

Application

When this command is executed, the playback is performed in the specified speed mode from the frame specified by frame number 1 up to the frame specified by frame number 2.

When the playback starts, the control is transferred to the next statement.

When the playback ends, the still picture of the frame specified by frame number 2 is displayed.

Specification of the speed mode

The speed mode determines the playback speed. The speeds which can be selected are as follows.

Speed mode	Playback speed
0	normal
1	fast ($\times 3$)
2	slow ($\times 1/5$)

Specification of the count number
 If "count number" parameter is included, the specified frames are played back as many times as specified in "count number".

The direction of the playback

The direction of the playback is set by the frame numbers 1 and 2.
 Forward play: When frame number 1 < frame number 2
 Reverse play: When frame number 1 > frame number 2

Note The execution of the __LDPSTART command when the HB-G900P is connected to the videodisc player may cause a slight lateral movement of the picture when the videodisc player starts and stops the playback of the specified scene.

This statement cannot be used to play back frames and chapters which contain a pre-recorded stop code.

Example

When

__LDPSTART (2000, 2500, 2)

is executed, frame number 2000 is searched for. Then, the playback from frame 2000 to frame 2500 is performed at slow speed ($\times 1/5$ of normal speed). The playback stops and the still picture of frame 2500 is displayed.

__LDPSTAT	"call LDP status"
Reads the status of the LDP-180P/LDP-1500P.	

Format

__LDPSTAT (array variable)

Array variable Integer type.

Application

The **__LDPSTAT** command reads the status of the videodisc player and stores the status information into the specified array variable. The status information is given by five integers.

The array must be declared in advance in a DIM statement with the size of 5 or more.

Note The lid of the videodisc player opens when the playback of a whole

disc finishes. If this happens while the **__LDPSTAT** command is being executed, the computer will hang up. In this case, press the **[ESC]** key.

Example

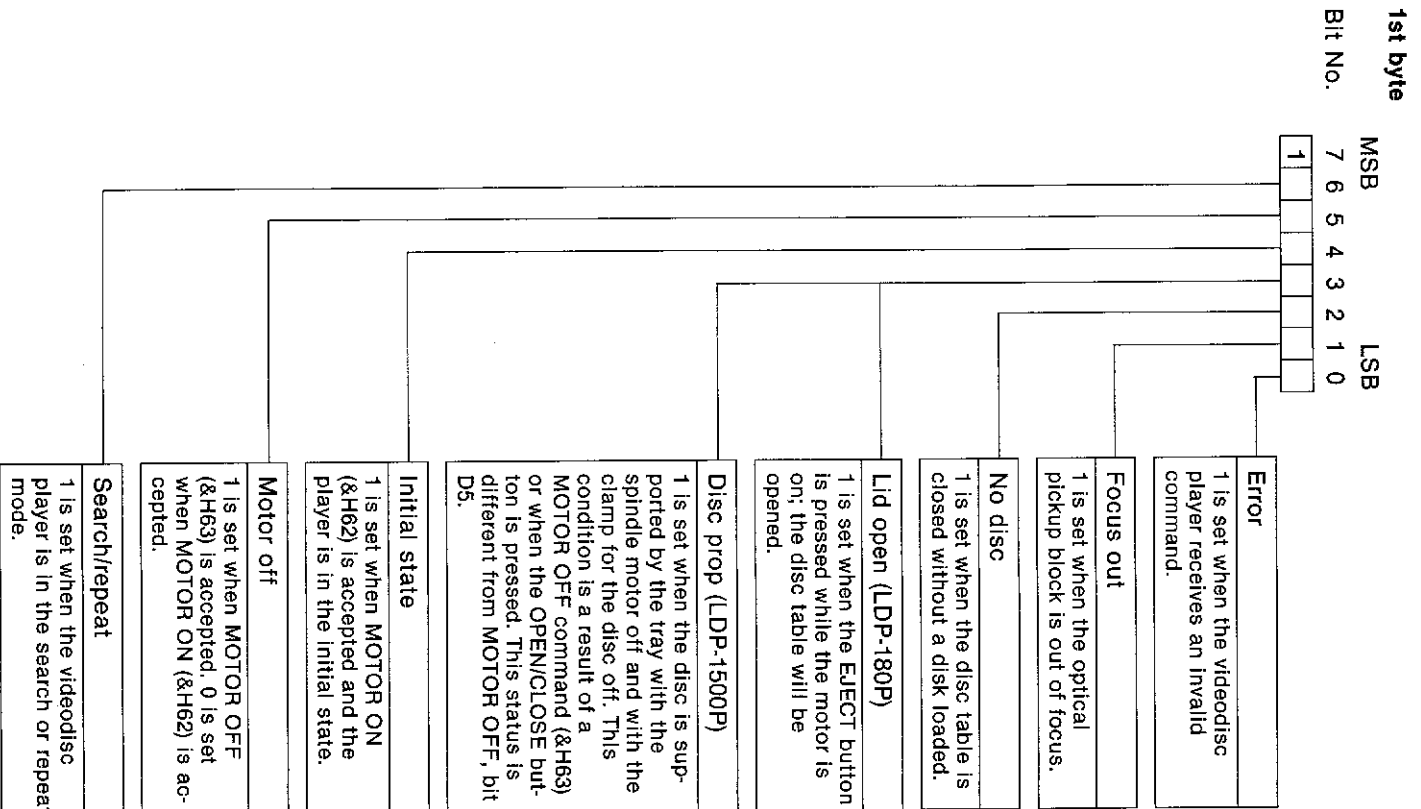
When

```
DIM S%(4)
__LDPSTAT(S%)
```

is executed, five integers indicating the status information of the videodisc player are assigned to S%(0) to S%(4).

videodisc player status information

The videodisc player status information is given by five integers. The integer type variables consist of two bytes. The upper byte of each of the five integers given here is always 0. The lower byte indicates the following information and is given in the order shown in the following page.

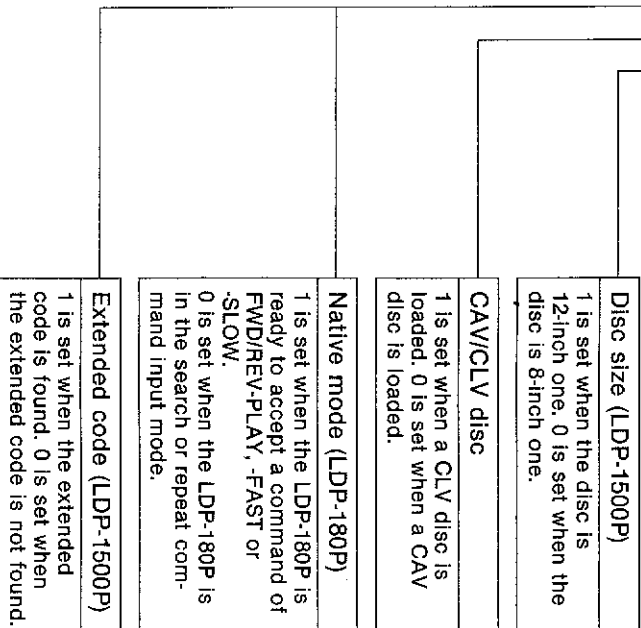


2nd byte

MSB LSB
 Bit No. 7 6 5 4 3 2 1 0
 0 0 0 0 0 0 0 0

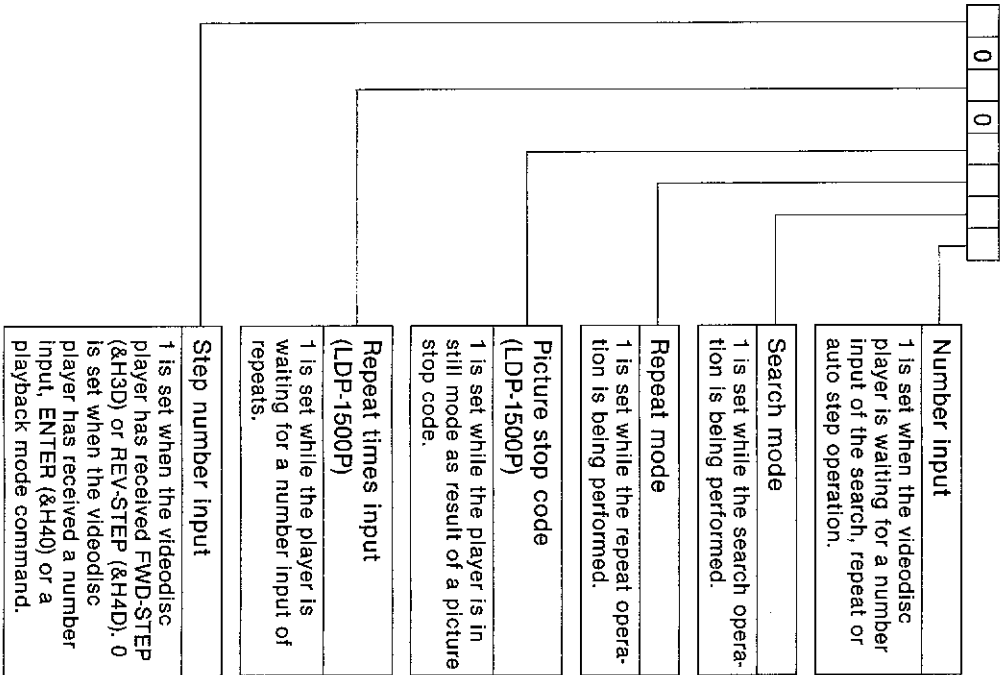
3rd byte

MSB LSB
 Bit No. 7 6 5 4 3 2 1 0
 0 0 0 0 0



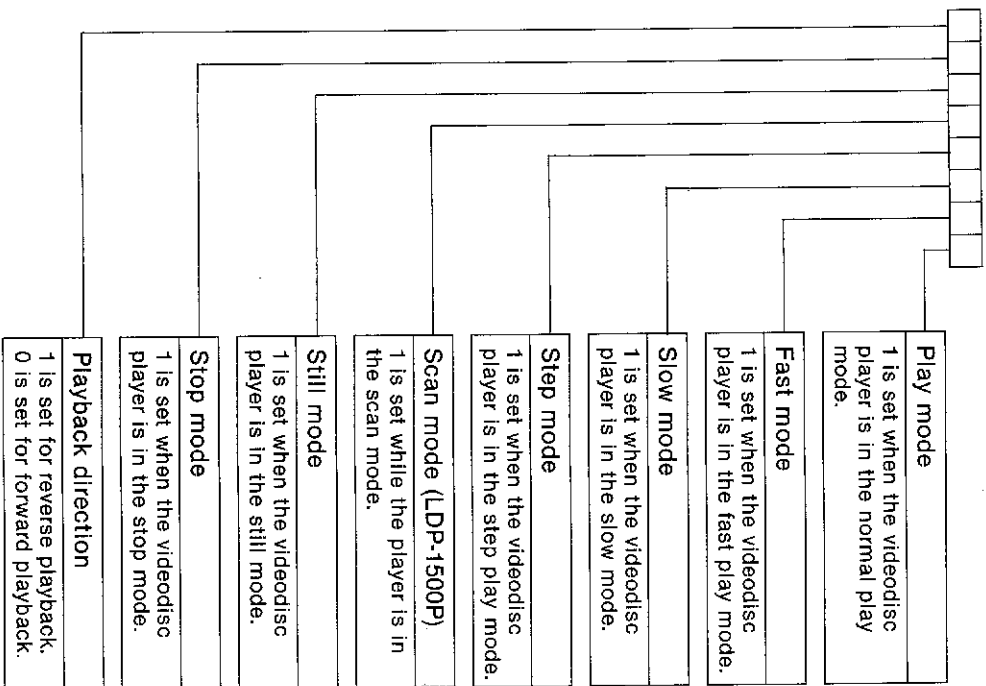
4th byte

MSB LSB
 Bit No. 7 6 5 4 3 2 1 0



5th byte
Bit No.

MSB
7 6 5 4 3 2 1 0
LSB



__LDPSTOP	"call LDP stop"
Stops playback of the videodisc player.	

Format
__LDPSTOP

Application
The __LDPSTOP statement stops playback in any mode. The video signal output from the player is halted. After the __LDPSTOP statement is executed, playback cannot be resumed with the __LDPCONT statement.

__LDPWAIT

"call LDP wait"

Suspends the execution of a program until the LDP-180P/LDP-1500P accesses a frame whose number is greater than or equal to the specified frame number.

Format

__LDPWAIT (frame number[,wait mode])

Frame number **Condi.** Numeric constant, variables, array variables or their expressions, $1 \leq$ frame number \leq 54000.

Wait mode

Condi.

0 = No interrupt.

Holds the execution of a program until the playing of the particular video frame/chapter specified by a __LDPSTART/__LDPSTART statement is completed.

- 1 = Return key is defined to be the interrupt. Holds the execution of a program until the playing of a particular video frame/chapter specified by a __LDPSTART/__LDPSTART statement is completed or the return key is pressed.
 - 2 = Similar to 1 except that the interrupt key is the switch on the device connected to the CONTROLLER A.
 - 3 = Same as above except CONTROLLER B is used.
- Omit!** 0 is specified.


Application

When this command is executed, the program execution is suspended until the videodisc player accesses a frame whose number is greater than or equal to the specified frame number. The execution is then transferred to the next statement in the program.

This command is used in conjunction with __LDPSTART or __LDPSTART.


Example

```
10 __LDPSTART(2000,3000)
20 __LDPWAIT(2500,0)
30 PRINT "Frame 2500 is accessed."
```

When this program is executed, playback in normal speed starts from frame 2000. In line 20, the HB-G900P waits until frame 2500 is accessed by the videodisc player. When frame 2500 is accessed, the control is transferred to line 30 and "Frame 2500 is accessed" is displayed. The playback will continue up to frame 3000. In this program, pressing the  key while the HB-G900P is waiting for frame 2500 will do nothing.

When line 20 is changed as follows.

```
20 __LDPWAIT(2500,1)
```

and the program is executed, the videodisc player will perform playback in the same way as in the above program. However, when the  key is pressed while the HB-G900P is waiting for frame 2500 to be accessed, the still picture of the frame accessed at the time when the key is pressed is obtained and the control is transferred to the next statement, in this case line 30.

Note When

```
10 __LDPSTART(2500,1500)
20 __LDPWAIT(2000,0)
30 PRINT "PLAY END"
```

is executed, "PLAY END" will be displayed right after the playback started from frame 2500. This is because the number of the frame currently accessed (frame 2500) is greater than the specified frame number in __LDPWAIT command.

__SLFFONT

"call select font"

Selects the type face of the alphanumeric characters displayed with a __TEXT command.

Format

__SLFFONT ("type face name", array variable)

Type face name **Cond** String constant, variables, array variables or their expressions indicating a type face.

Array variable Integer type.

Application

The __SLFFONT command loads a file for the specified type face and assigns the data into the specified array variables so that the characters of the specified type are displayed with the __TEXT command.

The array must be declared in advance in a DIM statement in order to set up the necessary area in the memory for the font data. The size of the area must be 3000 or larger.
The type face is specified by the following names.

Type face name

Type face

Example

DECO16 Deco 16



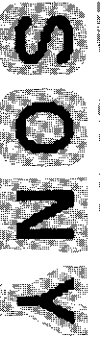
POST16 Poster 16



CLAS16 Classic 16



EURO16 European 16



Notes

- The backup copy of the supplied disk containing the font data must be inserted into the disk drive before executing the __SLFFONT command.
- Load the file for the desired font data in the form of a program. The file which has been loaded clears after the program is executed. If you are going to use the same file or other file in a different program, the file must again be loaded in that new program.

Example

When classic characters are to be displayed when __TEXT command is executed, execute:

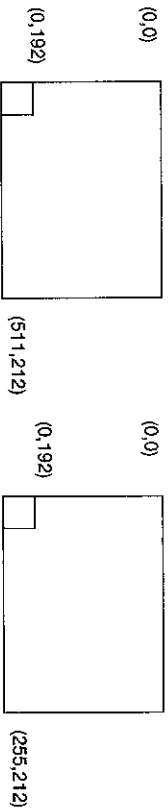
```
10 DIM F%(3000)
20 __SLFFONT("CLAS16",F%)
```

Please note that this program only loads the file for the specified type face. In order to display the characters, you must specify the character strings, the location to be displayed, etc. with the __TEXT command.

TEXT	"call text"
Displays an alphanumeric character string.	

Format

TEXT ("character string", array variable, X-coordinate, Y-coordinate, character color, edge color, pitch, edge mode)



X-coordinate

Cond.

SCREEN 7
Numeric constant, variables, array variables or their expressions, $0 \leq X\text{-coordinate} \leq 511$

SCREEN 8

Numeric constant, variables, array variables or their expressions, $0 \leq X\text{-coordinate} \leq 255$

Y-coordinate

Cond.

Numeric constant, variables, array variables or their expressions, $0 \leq Y\text{-coordinate} \leq 192$

Character color, edge color

Cond.

SCREEN 7
Numeric constant, variables, array variables or their expressions, $0 \leq \text{color} \leq 15$

Cond.

SCREEN 8
Numeric constant, variables, array variables or their expressions, $0 \leq \text{color} \leq 255$

Pitch

Cond.

Numeric constant, variables, array variables or their expressions, $0 \leq \text{pitch} \leq 9$

Edge mode

Cond.

Numeric constant, variables, array variables or their expressions, $0 \leq \text{edge mode} \leq 6$
Integer type.

Array variable

Notes

- The screen display mode must be set to 7 or 8 with the SCREEN command in advance of the TEXT command.
- When a number greater than 192 is specified for the Y-coordinate, the characters will not be wholly displayed.

Application

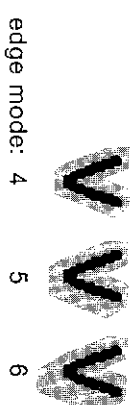
This command displays the specified character string with its upper left-hand corner placed at the position specified by X and Y coordinates on the screen.
The array variable must be the same array variable used with the SLFONT command.

The edge mode specifies how many dots are to be displayed as the edge of each character.
When 0 is specified, the characters will not be edged.

The numbers 1 through 3 specify how many dots are to be displayed as the edge width. When one of these numbers are specified, the characters are edged equally on all edges by the specified number of dots.



The numbers 4 through 6 specify how many dots are to be displayed as the shadow. When one of these numbers are specified, the characters are displayed as if they are lighted from upper left-hand corner.



The pitch specifies the number of dots between the adjacent characters.

The character and edge colors can be selected as follows. In case of SCREEN 7, 16 colors can be selected out of 512 colors using the color palette function. The following is the list of preset color codes.

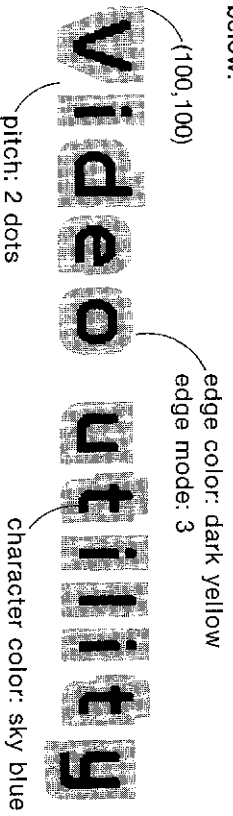
Code	Color	Code	Color
0	transparent	8	medium red
1	black	9	light red
2	medium green	10	dark yellow
3	light green	11	light yellow
4	dark blue	12	dark green
5	light blue	13	magenta
6	dark red	14	gray
7	sky blue	15	white

In case of SCREEN 8, colors can be selected from 256 colors. For details, refer to the MSX2 BASIC Programming Reference Manual.

Example
When

```
10 DIM F%(3000)
20 _SIFONT("DECO16",F%)
30 SCREEN 7
40 _TEXT("Video utility",F%,100,100,7,10,2,3)
```

are executed, a character string "Video utility" is displayed as shown below:



__VSW

Changes the display on the monitor screen.

Format
__VSW (numeric)
Numeric **Cond.**

- 0 = computer only mode (genlock)
- 1 = superimpose mode (genlock)
- 2 = video only mode (genlock)

ERROR MESSAGES

When the extended commands are used, the following message will appear on the display if any error occurs.

*** COMMUNICATION NOT READY ***

This message appears when

- an extended command is executed without having the `__LDPINIT` command executed.
 - a command is sent to the videodisc player after the Device I/O error message has appeared.
- When this message appears, send the `__LDPINIT` command.

Device I/O error

This message appears when

- the `__LDPINIT` command is sent but the RS-232C cable is improperly connected.
 - commands are sent when a CLV disc is loaded or when there is no disc.
 - the BAUD RATE of the IF-180/LDP-1500P is improperly set.
- When this message appears, make the necessary correction and send the `__LDPINIT` command again.

*** LDP OUTPUT ERROR ***

This message appears when a code sent by the `__LDPPOUT` command is not in the range of &H30 to &H63 or invalid at the time it is sent. When this message appears, send the `__LDPPOUT` command again with an appropriate code.

*** FRAME NO ERROR ***

This message appears when a number not in the range of 1 to 54000 is sent as a frame number.

When this message appears, send the command again with an appropriate frame number.

*** CHAPTER NO ERROR ***

This message appears when a number not in the range of 1 to 79 is sent as a chapter number.

When this message appears, send the command again with an appropriate chapter number.

*** LDP SPEED MODE ERROR! ***

This message appears when a number not in the range of 0 to 2 is sent as a speed mode.

When this message appears, send the command again with an appropriate speed mode.

*** LDP COUNT TIMES MODE ERROR! ***

This message appears when a number not in the range of 1 to 8 is sent as a "count number".

When this message appears, send the command again with an appropriate "count number".

*** OUT OF SCREEN ***

This message appears when

- the `__TEXT` command is executed but the screen display mode has not been set to 7 or 8. In this case, add the `SCREEN` command in your program for displaying the character string with the line number smaller than that of the `__TEXT` command.
- the character string specified by the `__TEXT` command occupies more than 512 dots (`SCREEN 7`) or 256 dots (`SCREEN 8`) in the X-coordinate direction. In this case, change the values of parameters in the `__TEXT` command so that the specified character string would fit into the range of whichever screen display mode you are using.

- the picture to be displayed by the `__GLOAD` command will be out of screen. Specify the proper parameters in the `__GLOAD` command.

*** ILLEGAL SCREEN MODE ***

This message appears when the screen display mode has not been set to the same screen mode (7 or 8) as the picture to be displayed by `__GLOAD`.

SAMPLE PROGRAM

```
10 ' VIDEO UTILITY DEMO PROGRAM '85.10.28
20 DIM A%(3000)
30 _SLFONT("CLAS16",A%)
40 SCREEN 7,3
50 _LDPINIT
60 SETVIDEO 0
70 COLOR 15,4,4
80 CLS
90 _TEXT("VIDEO UTILITY DEMO",A%,110,0,10,1,3,1)
100 _TEXT("1. EXAMPLE1",A%,130,70,15,1,3,1)
110 _TEXT("2. EXAMPLE2",A%,130,120,15,1,3,1)
120 _TEXT("SELECT NUMBER",A%,130,180,3,1,3,1)
130 K$=INKEY$
140 IF K$="" THEN 130
150 IF K$="1" THEN GOSUB 170
160 IF K$="2" THEN GOSUB 260 ELSE 130
170 ' *** EXAMPLE1 ***
180 SET VIDEO 2,,1,3,1
190 _LDPSTART(1000,2000,0)
200 COLOR 15,0,0
210 CLS
220 _INDEXON
230 _TEXT("1. EXAMPLE1",A%,150,180,15,1,3,1)
240 _LDPEND
250 RETURN 60
260 ' *** EXAMPLE2 ***
270 SET VIDEO 2,,1,3,1
280 _LDPSTART(3000,4000,0)
290 COLOR 15,0,0
300 CLS
310 _INDEXON
320 _TEXT("2. EXAMPLE2",A%,150,180,15,1,3,1)
330 _LDPEND
340 RETURN 60
```