SHARP

PN-425

LCD MONITOR

OPERATION GUIDE

Contents

This guide contains instructions regarding operation, settings, and similar details.
For instructions regarding connection and installation, refer to the included Operation Manual.

Manual Scope

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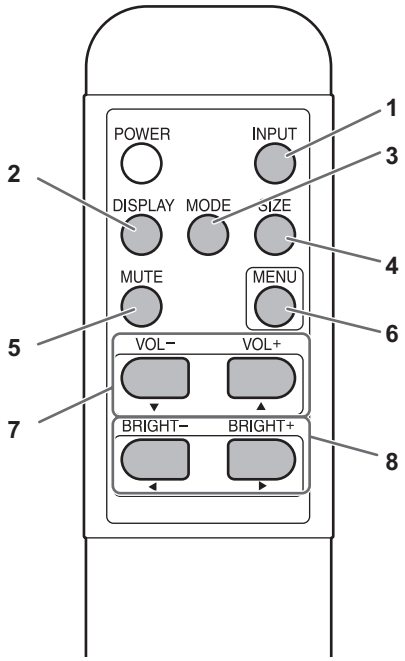
- Language of OSD menu used in this manual is English by way of example.
- Illustrations in this manual may not exactly represent the actual product or display.
- This manual assumes use in horizontal orientation, except where specifically noted.

Basic Operation



1. INPUT (Input mode selection)

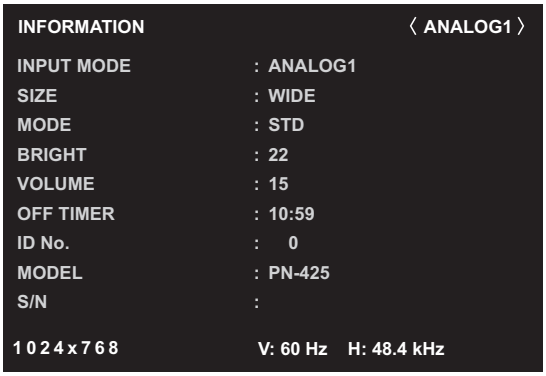
The menu is displayed. Press ▲ or ▼ to select the input mode, and press ▶ to enter.

* You can select the input terminal by pressing the input switch of the monitor.

	Input mode	Video	Audio
PC input	DIGITAL	PC digital RGB input terminal	PC audio input terminal
	ANALOG1	PC analog RGB input terminal	
	ANALOG2	PC analog RGB input terminals (BNC)	
AV input	COMPONENT	Component video input terminals	Audio input terminals (COMPONENT)
	VIDEO	Composite video input terminals or S-video input terminal	Audio input terminals (VIDEO)

2. DISPLAY

Displays monitor information. The display disappears when this button is pressed again or disappears automatically after approximately 15 seconds.



3. MODE (Screen mode selection)

Each time you press this button, the screen mode changes in the following order:

STD (Standard) → OFFICE*1 → VIVID → sRGB*2 → STD (Standard) ...

*1 Display brightness is lowered. (This mode saves power.)

*2 When the input mode is DIGITAL/ANALOG1/ANALOG2. sRGB is international standard of color representation specified by IEC (International Electrotechnical Commission). Color conversion is made in taking account of liquid crystal's characteristics and represents color tone close to its original image.

4. SIZE (Screen size selection)

Each time you press this button, the screen size changes in the following order: (See page 4.)

WIDE → ZOOM1 → ZOOM2 → NORMAL → Dot by Dot → WIDE ...

5. MUTE

Turns off the volume temporarily.

Press the MUTE button again to turn the sound back to the previous level.

6. MENU

Displays and turns off the menu screen (see page 5).

7. VOL +/- (Volume adjustment)

Pressing ▲ or ▼ displays the VOLUME menu when the menu screen is not displayed.

Press ▲ or ▼ to adjust the volume of the sound.

* If you do not press any buttons for about 4 seconds, the VOLUME menu automatically disappears.

8. BRIGHT +/- (Backlight adjustment)

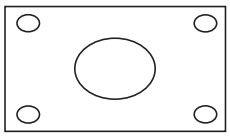
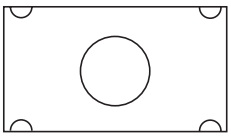
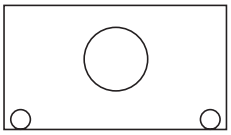
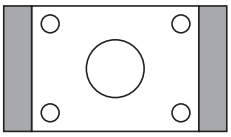
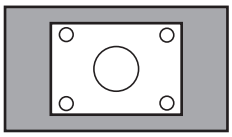
Pressing ◀ or ▶ displays the BRIGHT menu when the menu screen is not displayed.

Press ◀ or ▶ to adjust the brightness.

* If you do not press any buttons for about 4 seconds, the BRIGHT menu automatically disappears.

■Switching the screen size

Even when the screen size is changed, the display may remain the same depending on the input signal.

WIDE		PC input	Displays image so it fills the entire screen.
		AV input	An image with a 4:3 aspect ratio is stretched to fill the entire screen.
ZOOM1		PC input	An image with a 4:3 aspect ratio is enlarged to fill the entire screen without changing the aspect ratio. The edges of the image may be cut off.
		AV input	
ZOOM2		PC input	Use this size if ZOOM1 cuts off the subtitles.
		AV input	
NORMAL		PC input	Displays image so it fills the screen without changing the aspect ratio of the input signals.
		AV input	Displays the entire image of the aspect ratio of 4:3 without changing the aspect ratio.
Dot by Dot		PC input	Displays the dots of the signals input from the connected PC as the corresponding dots on the screen.
		AV input	Displays the dots of the input signals as the corresponding dots on the screen. *

* Displays 1080i images at reduced size so that they fill the entire screen.

TIPS

- Using this monitor's screen-size switching or dual-screen display functions to compress or expand the screen for commercial or public viewing in establishments like cafes or hotels may infringe on the rights of the creators, as protected by Copyright Law, so please be careful.
- When ENLARGE is set, the screen size is fixed to WIDE mode.
- When dual-screen display is selected, the screen size cannot be changed.
- The appearance of the original video may change if you select a screen size with a different aspect ratio than the original image (e.g. TV broadcast or video input from external equipment).
- When an ordinary non-wide image (4:3) is viewed with the whole screen using the screen-size switching function of this monitor, the edge of the image may be lost or appear distorted. If you wish to respect the creator's intentions, set the screen size to NORMAL.
- When playing commercial software, parts of the image (like subtitles) may be cropped. In this case select the optimal screen size using the screen-size switching function of this monitor. With some software, there may be noise or distortion at the edges of the screen. This is due to the characteristics of the software, and is not a malfunction.
- Depending on the original image size, black bands may remain at the edges of the screen.

Menu Items

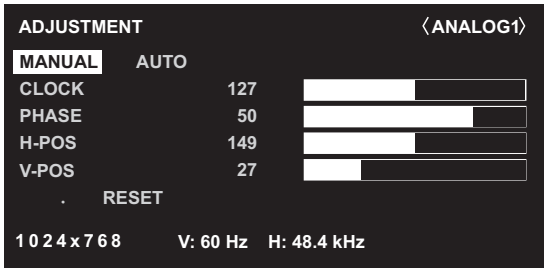
Displaying the menu screen

Video and audio adjustment and settings of various functions are enabled. This section describes how to use the menu items. See pages 6 to 8 for details of each menu items.

■Example of operation

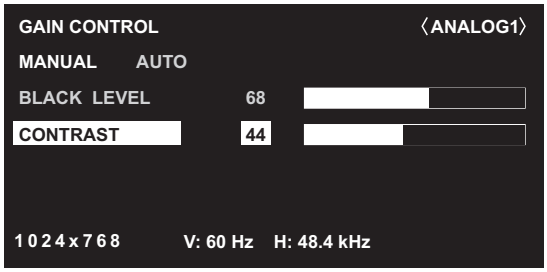
(Adjusting CONTRAST in the GAIN CONTROL menu)

1. Press MENU to display the menu screen.

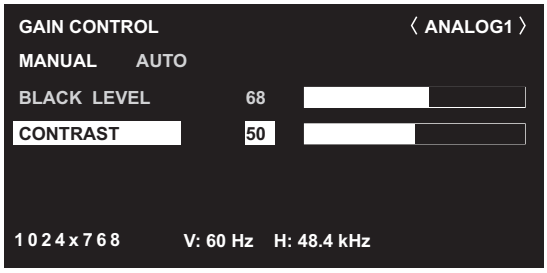


2. Press MENU to display the GAIN CONTROL menu.

3. Press ▼ to select CONTRAST.



4. Press ◀ or ▶ to adjust the setting.

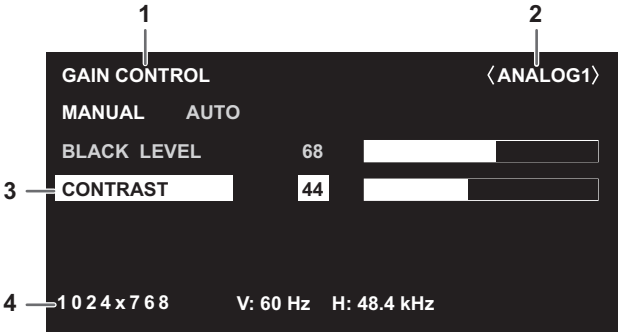


5. Press MENU to close the menu screen.

TIPS

- The menu will differ depending on the input mode.
- The menu screen will close automatically if no operation is performed for about 15 seconds.

■Menu screen display



1 Name of the menu
2 Input mode
3 An item being selected (highlighted)
4 Screen resolution of input signal, and other data.

TIPS

- Items that cannot be selected appear in gray. (e.g. Function not supported by the current input signal)

Menu item details

The menu will differ depending on the input mode.

■ADJUSTMENT (ANALOG1/ANALOG2)

MANUAL/AUTO

Adjusts CLOCK, PHASE, H-POS, and V-POS.
If you are using a Windows PC, use the adjustment pattern on the supplied CD-ROM. (See page 10.)
MANUAL..... Selects and adjusts CLOCK, PHASE, H-POS, and V-POS.
AUTO..... Use this automatic adjustment when you use the PC analog RGB input terminal or PC analog RGB input terminals (BNC) to display a PC screen for the first time or when you change the setting of the PC. (See page 10.)

CLOCK

Adjusts frequency for sampling clock for applicable video.
Adjust when there is flickering in the form of vertical stripes.
When using the adjustment pattern (see page 10), make adjustments so that no vertical stripe noise appears in it.

PHASE

Adjusts sampling clock phase for applicable video.
Useful when small characters appear with low contrast and/or there are flickers at corners.
When using the adjustment pattern (see page 10), make adjustments so that no horizontal stripe noise appears in it.
* Adjustments to PHASE should be made only after CLOCK has been correctly set.

H-POS

Adjust the horizontal position of the image.

V-POS

Adjust the vertical position of the image.

RESET

Pressing ▶ resets the values of the ADJUSTMENT menu items to the factory preset values.

■GAIN CONTROL (DIGITAL/ANALOG1/ANALOG2)

MANUAL/AUTO (ANALOG1/ANALOG2)

Adjusts BLACK LEVEL and CONTRAST.
If you are using a Windows PC, use the adjustment pattern on the supplied CD-ROM. (See page 10.)
MANUAL..... Selects and adjusts BLACK LEVEL and CONTRAST.
AUTO..... Automatically adjusts BLACK LEVEL and CONTRAST.

BLACK LEVEL

Adjusts the entire brightness of the video signals.

CONTRAST

Adjusts the brightness of the image.

■COLOR CONTROL (DIGITAL/ANALOG1/ANALOG2)

WHITE BALANCE

THRU..... Displays the input signal level as is. (for DIGITAL only)
PRESET ..... Selects the color temperature using PRESET.
USER..... Used for adjusting R-CONTRAST, G-CONTRAST, and B-CONTRAST respectively.

PRESET

Allows selection from the preadjusted settings. (For a guide to the color temperatures of the adjustment values, see page 8.)

R-CONTRAST

Adjusts red component when WHITE BALANCE is set to USER.

G-CONTRAST

Adjusts green component when WHITE BALANCE is set to USER.

B-CONTRAST

Adjusts blue component when WHITE BALANCE is set to USER.

COPY TO USER

SET..... Pressing ▶ copies the value set for PRESET to the USER setting.

GAMMA

Select a gamma value.

■VIDEO ADJUSTMENT (COMPONENT/VIDEO)

CONTRAST

Adjusts the light areas of the image.

BLACK LEVEL

Adjusts the entire brightness of the video signals.

TINT

Adjusts the hue. Selecting + changes the color towards green, and selecting - changes it towards magenta.

COLORS

Adjusts the color intensity.

SHARPNESS

Adjusts the sharpness of the image.

WHITE BALANCE

Allows selection from the preadjusted settings. (For a guide to the color temperatures of the adjustment values, see page 8.)

GAMMA

Select a gamma value.

■MODE SELECT 1

480 LINES (ANALOG1/ANALOG2)

If a computer connected to the PC analog RGB input terminal or the PC analog RGB input terminals (BNC) outputs resolutions of 640 x 480 or 848 x 480, select the relevant horizontal resolution.

768 LINES (ANALOG1/ANALOG2)

If a computer connected to the PC analog RGB input terminal or the PC analog RGB input terminals (BNC) outputs resolutions of 1024 x 768, 1280 x 768, or 1360 x 768, select the relevant horizontal resolution.

ENLARGE H

Sets the number of screen splits (number of monitors) in the longer direction used for the enlargement. (See page 9.)

ENLARGE V

Sets the number of screen splits (number of monitors) in the shorter direction used for the enlargement. (See page 9.)

ENLARGE-POS H/ENLARGE-POS V

Specify the split screen to be displayed when the enlargement function is used. (See page 9.)

BEZEL H/BEZEL V

Sets the frame width of the display when the enlargement function is used.
(H: Width of the shorter side, V: Width of the longer side)

MULTI ZOOM

Adjusts the enlarged screen. Pressing ▶ displays the next menu.
IMAGE ZOOM ..Adjusts the scale of enlargement.
H-POS .....Adjusts the position of the longer direction.
V-POS.....Adjusts the position of the shorter direction.

AUDIO

Adjust the volume of the sound output from the speaker.
Pressing ▶ displays the next menu.
TREBLE.....Adjusts the volume of treble-level sound.
BASS.....Adjusts the volume of bass-level sound.
BALANCE.....Adjusts the balance of the audio sound between right and left.

■MODE SELECT 2

OFF TIMER

Set the time until the monitor turns off (enters standby mode) between 0 and 23 in units of one hour. This function is disabled when “0” is specified.

OSD H-POSITION

Adjusts the horizontal display position of menu screen.

OSD V-POSITION

Adjusts the vertical display position of menu screen.

LANGUAGE

Sets the display language for the menu screen.
Pressing ▶ displays the selection menu.

POWER ON DELAY

You can delay the screen display after the monitor is turned on. The period can be set up to 60 seconds in units of one second. When this function is activated, the power LED flashes in orange. This function is disabled when “0” is specified.

ID No. SET

Assigns ID numbers to monitors using RS-232 cables.
The numbers 1 to 255 are available for ID numbers.
If “0” is set, the system regards this as the state where no ID number is set.
This should normally be set to “0”.

MONITOR

Select the installation direction of the monitor.
LANDSCAPE.....Horizontal orientation
PORTRAIT .....Vertical orientation

SCAN MODE (COMPONENT/VIDEO)

Sets the scan mode used for AV mode input.
MODE1....Over-scan display
MODE2....Under-scan display
MODE3....Under-scan display when the input signal is 1080i. Otherwise, over-scan display
* Even when MODE1 is selected, under-scan display is used when the input signal is 1080i and the screen size is Dot by Dot.

COLOR SYSTEM

Selects the video signal system for AV equipment connected to the S-video input terminal and composite video input terminals (PAL/PAL-60/SECAM/NTSC (3.58)/NTSC (4.43)). If AUTO is selected, the system is automatically set according to the input signal.

■MODE SELECT 3

PIP MODES (See page 9.)

Sets the display method.
OFF .....Displays one screen.
PIP.....Displays a sub screen inside a main screen.
PbyP .....Displays a main screen and a sub screen in a line.
PbyP2 .....Displays a main screen which measures 1024 pixels in the longer direction and a sub screen in a line.

PIP SIZE

Sets the size of the sub screen in PIP mode.

PIP H-POS

Adjusts the horizontal position of the sub screen in PIP mode.

PIP V-POS

Adjusts the vertical position of the sub screen in PIP mode.

PIP SOURCE (VIDEO)

Selects the input signal of the sub screen in PIP, PbyP, or PbyP2 mode.

SOUND CHANGE

Sets the sound which is output in PIP, PbyP, or PbyP2 mode. If the main screen is displayed as a full screen by the AUTO OFF function, the sound for the main screen is output even when the sound for the sub screen is specified.

PbyP2 POS

Sets the position of the sub screen in PbyP2 mode.

AUTO OFF

Sets the display method when no signals for the sub screen are input in PIP, PbyP, or PbyP2 mode.
AUTO..... Displays the main screen as a full screen.
MANUAL..... Displays a main screen and a black sub screen.

TIPS

- When WHITE BALANCE is set to THRU, BLACK LEVEL, CONTRAST and GAMMA cannot be set.
- When MODE is set to sRGB or VIVID, COLOR CONTROL cannot be set. (DIGITAL/ANALOG1/ANALOG2)
- When MODE is VIVID, WHITE BALANCE and GAMMA cannot be set. (COMPONENT/VIDEO)

■Guide to the color temperatures of the adjustment values

The following is a guide to the color temperatures of the respective adjustment values for WHITE BALANCE.

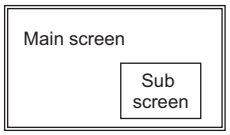
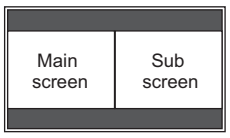
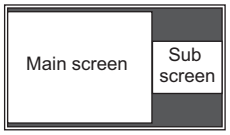
- Factory-adjusted value is “13” (approx. 9,000K).
- The setting values are shown for reference. The color temperature of the screen varies over time. This function is not intended to keep the color temperature constant.

Adjustment value	Color temperature (K)
15	app. 10,000
14	app. 9,500
13	app. 9,000
12	app. 8,500
11	app. 8,000
10	app. 7,500
9	app. 7,000
8	app. 6,500
7	app. 6,000
6	app. 5,500
5	app. 5,000
4	app. 4,500
3	app. 4,000
2	app. 3,500
1	app. 3,000

■Dual screen display

You can display the following screens simultaneously.
- VIDEO and DIGITAL/ANALOG1/ANALOG2
- VIDEO and COMPONENT

Set this function with PIP MODES in the MODE SELECT 3 menu. (See page 8.)

PIP		A sub screen is displayed inside a main screen.
PbyP		A main screen and a sub screen are displayed in a line.
PbyP2		Displays a main screen which measures 1024 pixels in the longer direction and a sub screen in a line.

* The currently selected input signal is displayed on the main screen.

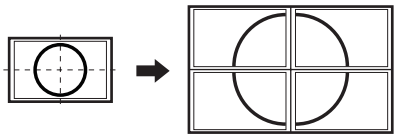
TIPS

- You might infringe on a copyright of the author which is protected by copyright law when you display the images of the computer screen and television/VCR simultaneously for profit-making or to show the image to the public.
- The screen size for dual-screen display is the same as the screen size for single-screen display. The Dot by Dot screen is displayed in NORMAL size except when it is set as the PIP main screen.
- When dual-screen display is selected, the screen cannot be enlarged. MONITOR settings cannot be changed either.

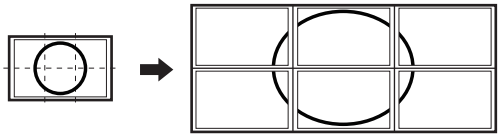
■Enlarge

- You can align several monitors and integrate them into a single large screen to display.
- Up to 4 monitors can be aligned in both the longer and shorter directions.
- Each monitor displays enlarged views of separated images.

(Example)
Longer direction: 2 monitors
Shorter direction: 2 monitors



Longer direction: 3 monitors
Shorter direction: 2 monitors

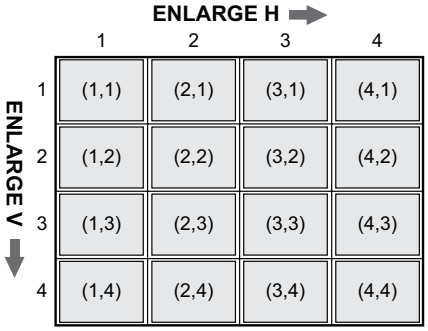


Setting procedure

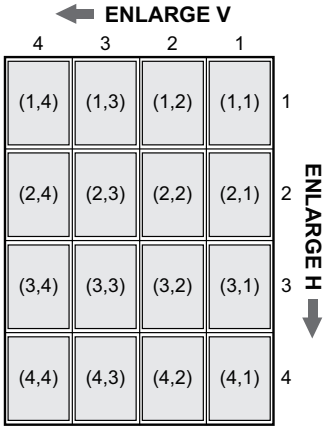
In the MODE SELECT 1 menu, set ENLARGE H/V and ENLARGE-POS H/V. (See page 7.)

1. **Set the number of monitors aligned in the longer direction in ENLARGE H.**
2. **Set the number of monitors aligned in the shorter direction in ENLARGE V.**
3. **Set the section of the separated image to be displayed on each monitor in ENLARGE-POS H and ENLARGE-POS V.**

In horizontal orientation



In vertical orientation



* The numbers in parentheses are the setting values in (ENLARGE-POS H, ENLARGE-POS V) format.

TIPS

- Up to 4 monitors can be linked in daisy chain using PC analog RGB output terminals.
- For connections other than those indicated above, a separate splitter for the video signal (commercially available) is required.
- Dual-screen display is disabled when the enlargement function is used.
- To cancel the enlargement, set “1” for ENLARGE H and ENLARGE V respectively.

Adjustments for PC screen display

■Automatic adjustment

When you use the PC analog RGB input terminal or PC analog RGB input terminals (BNC) to display a PC screen for the first time, or when you change the setting of the PC, use the automatic screen adjustment.

1. **Switch the input to ANALOG1 or to ANALOG2 and display the adjustment pattern.** (See the description below.)
2. **Press MENU to display the ADJUSTMENT menu.**
3. **Press and select AUTO.**
   The automatic adjustment is complete in several seconds.
4. **Press MENU 6 times to close the menu screen.**

TIPS

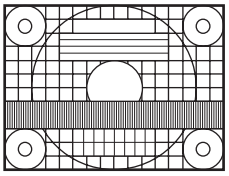
- If the screen cannot be adjusted properly with one automatic adjustment, repeat the automatic adjustment 2 or 3 times. Try manual adjustment if necessary.

■Screen display for adjustment

Before making adjustments in the ADJUSTMENT menu or GAIN CONTROL menu, display an image to brighten the entire screen. If you are using a Windows PC, use the adjustment pattern on the supplied CD-ROM.

Opening the adjustment pattern

1. **Load the supplied CD-ROM into the computer's CD-ROM drive.**
2. **Open the CD-ROM in [My Computer].**
3. **Double-click [Adj_uty.exe].**
   The adjustment pattern will appear.
   Adjust the screen automatically or manually.



4. **When adjustment is finished, press the [Esc] on the computer's keyboard to quit the adjustment program.**
5. **Eject the CD-ROM from the CD-ROM drive.**

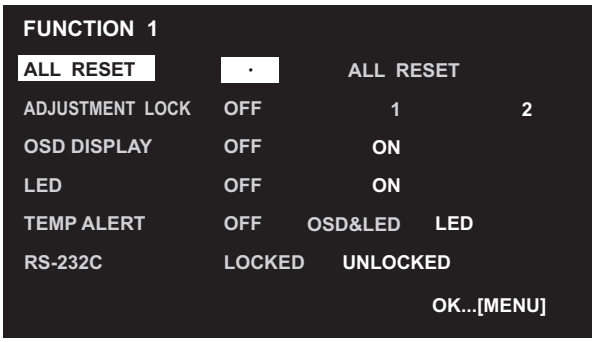
TIPS

- If the display mode on the computer you are using is 65,000 colors, the color levels in the color pattern may appear differently or grayscale may appear to be colored. (This is due to the specifications of the input signal and is not a malfunction.)

Initialization (Reset)/Functional Restriction Setting

You can return the settings to their factory-preset values and restrict operations.

1. After pressing SIZE for about 5 seconds, press ▲, ▶, ▼, and ◀ in that order.



2. Select and set the items.

ALL RESET

Resets the settings to the factory default settings.
After initialization, turn the main power switch off and then back on.

ADJUSTMENT LOCK

You can disable operations on the monitor and the remote control unit that use buttons.
OFF ... Enables operation.
1..... Disables all operations other than turning power on/off and FUNCTION 1.
2..... Only the FUNCTION 1 operation is enabled. Disables all operations other than FUNCTION 1 (not even power on/off).

OSD DISPLAY

Hides/shows menus.
The FUNCTION 1 screen cannot be hidden.

LED

Specifies whether to light power LED.

TEMP ALERT

Selects the notification method for an abnormal temperature.
OFF ..... Do not notify about an abnormal temperature.
OSD&LED .... When an abnormal temperature is detected, the power LED flashes in red and green alternately and the screen displays a message: TEMPERATURE.
LED..... When an abnormal temperature is detected, the power LED flashes in red and green alternately.

RS-232C

Specifies whether to allow control via RS-232C (see page 12).
LOCKED..... Disables control via RS-232C.
UNLOCKED.. Enables control via RS-232C.

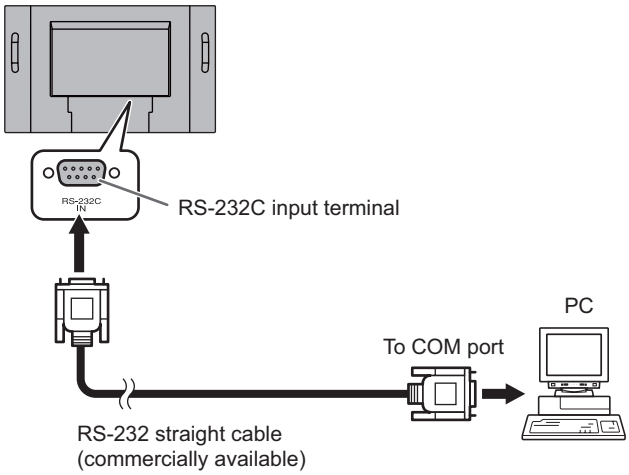
3. Press MENU to return to the normal screen.

Controlling the Monitor with a PC

You can control this monitor from a PC via RS-232C (COM port) on the PC.

PC connection

Connect with RS-232 straight cable between the PC's COM port (RS-232C connector) and the RS-232C input terminal on the monitor.



Communication conditions

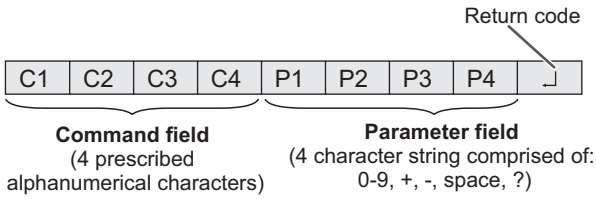
Set the RS-232C communication settings on the PC to match the monitor's communication settings as follows:

Baud rate	9600 bps	Stop bit	1 bit
Data length	8 bits	Flow control	None
Parity bit	None		

Communication procedure

■Command format

When a command is sent from the PC to the monitor, the monitor operates according to the received command and sends a response message to the PC.



Example: VOLM0030
VOLM ␣ ␣ 30

* Be sure to input 4 characters for the parameter. Pad with spaces ("␣") if necessary.
(" ↵ " is a return code (0DH, 0AH or 0DH))
Wrong : VOLM30↵
Right : VOLM ␣ ␣ 30↵

When inputting a negative value, specify a numerical value in 3 digits.

Example: AUTR-009

Do not use spaces for MPOS. Specify parameters using 6 numerical characters.

Example: MPOS010097

If a command has "R" listed for "Direction" in the "RS-232C command table" on page 14, the current value can be returned by using "?" as the parameter.

Example:

VOLM ? ? ? ? ← From PC to monitor (How much is current volume setting?).

30 ← From monitor to PC (Current volume setting: 30).

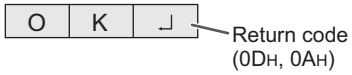
* If an ID number (see page 7) has been assigned (For example, ID number = 1).

VOLM ␣␣␣? ← From PC to monitor.

30 ␣ 001 ← From monitor to PC.

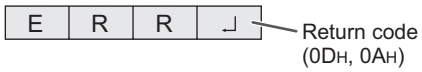
■Response code format

When a command has been executed correctly



A response is returned after a command is executed.

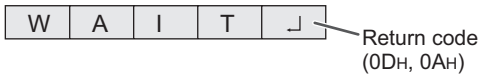
When a command has not been executed



TIPS

- “ERR” is returned when there is no relevant command or when the command cannot be used in the current state of the monitor.
- If communication has not been established for reasons such as a bad connection between the PC and monitor, nothing is returned (not even ERR).

If execution of the command is taking some time



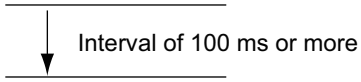
“WAIT” is returned. In this case, a value will be returned if you wait a while. Do not send any command during this period.

When control via RS-232C is locked (to prevent use) using the operation lock function (see page 11)

■Communication interval

- After OK or ERR is returned, you must send the following commands.
  To set a timeout for the command response, specify 10 seconds or longer.
- Provide an interval of 100 ms or more between the command response and the transmission of the next command.

VOLM0020
OK



INPS0001
WAIT
OK

TIPS

- When turning the power on while the POWER ON DELAY function is in use, set the timeout period to the POWER ON DELAY period + 10 seconds or longer.

RS-232C command table

How to read the command table

Command: Command field (See page 12.)
Direction: W When the “Parameter” is set in the parameter field (see page 12), the command functions as described under “Control/Response Contents”.
R The returned value indicated under “Reply” can be obtained by setting “????” or “␣␣␣?” in the parameter field (see page 12).
Parameter: Parameter field (See page 12.)
Reply: Response (Returned value)
*: “Yes” indicates a command which can be used in power standby mode.
“No” indicates a command which cannot be used in power standby mode.

TIPS

- To specify the horizontal/vertical positions for vertical orientation, specify the values for horizontal orientation.

Power control/Input mode selection

Function	Command	Direction	Parameter	Reply	Control/Response contents	*
Power control	POWR	W	0		Switches to standby mode.	Yes
			1		Returns from standby mode.	
		R		0	Standby mode	
				1	Normal mode	
				2	Input signal waiting mode	
Input mode selection	INPS	W	0		Toggle change for input mode.	Yes
			1		DIGITAL: DVI	
			2		ANALOG1: Analog RGB	
			3		COMPONENT: Component	
			4		VIDEO: S-Video/Video	
			5		Reserved (ERR code returned)	
			6		ANALOG2: Analog RGB (BNC)	
		R		1	DIGITAL: DVI	
				2	ANALOG1: Analog RGB	
				3	COMPONENT: Component	
				4	VIDEO: S-Video/Video	
				6	ANALOG2: Analog RGB (BNC)	

Video adjustment (When PC digital RGB input is used: DIGITAL)

Function		Command	Direction	Parameter	Reply	Control/Response contents	*
WHITE BALANCE	THRU	CTMP	WR	0	0		Yes
	PRESET			1-15	1-15		
	USER			99	99		
	R-CONTRAST	CRTR	WR	0-128	0-128		
	G-CONTRAST	CRTG	WR	0-128	0-128		
	B-CONTRAST	CRTB	WR	0-128	0-128		
GAIN CONTROL	BLACK LEVEL	BLVL	WR	0-60	0-60		Yes
	CONTRAST	CONT	WR	0-60	0-60		
GAMMA		GAMM	WR	0-2	0-2	0: 1.8, 1: 2.2, 2: 2.4	Yes
Input resolution	Resolution check	PXCK	R		-	Returns current resolution in the form of hhh, vvv.	No
SIZE (Screen size selection)		WIDE	WR	1	1	WIDE	Yes
				2	2	NORMAL	
				3	3	Dot by Dot	
				4	4	ZOOM1	
				5	5	ZOOM2	

Video adjustment
(When PC analog RGB/PC analog RGB (BNC) inputs are used: ANALOG1/ANALOG2)

Function		Command	Direction	Parameter	Reply	Control/Response contents	*
ADJUSTMENT	AUTO	ASNC	W	1			No
	CLOCK	CLCK	WR	0-255	0-255		
	PHASE	PHSE	WR	0-63	0-63		
	H-POS	HPOS	WR	0-500	0-500	Adjusts the position of the longer direction. Maximum value depends on resolution.	
	V-POS	VPOS	WR	0-100	0-100	Adjusts the position of the shorter direction.	
	RESET	ARST	W	1			
GAIN CONTROL	AUTO	AGIN	W	1			No
	BLACK LEVEL	BLVL	WR	0-127	0-127		Yes
	CONTRAST	CONT	WR	0-127	0-127		
WHITE BALANCE	PRESET	CTMP	WR	1-15	1-15		Yes
	USER			99	99		
	R-CONTRAST	CRTR	WR	0-128	0-128		
	G-CONTRAST	CRTG	WR	0-128	0-128		
	B-CONTRAST	CRTB	WR	0-128	0-128		
GAMMA		GAMM	WR	0-2	0-2	0: 1.8, 1: 2.2, 2: 2.4	Yes
Input resolution	Resolution check	PXCK	R		-	Returns current resolution in the form of hhh, vvv.	No
	Pixel setting	PXSL	WR	0	0	768) Reserved (ERR code returned)	
				1	1	768) 1360 x 768	
				2	2	768) 1280 x 768	
				3	3	768) 1024 x 768	
				4	4	480) Reserved (ERR code returned)	
				5	5	480) 848 x 480	
				6	6	480) 640 x 480	
SIZE (Screen size selection)		WIDE	WR	1	1	WIDE	Yes
				2	2	NORMAL	
				3	3	Dot by Dot	
				4	4	ZOOM1	
				5	5	ZOOM2	

Video adjustment
(When component video/composite video inputs are used: COMPONENT/VIDEO)

Function		Command	Direction	Parameter	Reply	Control/Response contents	*
VIDEO ADJUSTMENT	CONTRAST	CONT	WR	0-60	0-60		Yes
	BLACK LEVEL	BLVL	WR	0-60	0-60		
	COLORS	COLR	WR	0-60	0-60		
	TINT	TINT	WR	0-60	0-60		
	SHARPNESS	SHRP	WR	0-20	0-20		
	WHITE BALANCE	CTMP	WR	1-15	1-15		
GAMMA		GAMM	WR	0-2	0-2	0: 1.8, 1: 2.2, 2: 2.4	Yes
SIZE (Screen size selection)		WIDE	WR	1	1	WIDE	Yes
				2	2	ZOOM1	
				3	3	ZOOM2	
				4	4	NORMAL	
				5	5	Dot by Dot	
Input resolution	Resolution check	RESO	R		-	480i, 480p, 1080i, 720p, 576i, 576p	No
SCAN MODE		SCAN	WR	0-2	0-2	0: MODE1, 1: MODE2, 2: MODE3	Yes

Common input controls

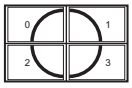
Function		Command	Direction	Parameter	Reply	Control/Response contents	*
PIP PbyP PbyP2	PIP MODES	MWIN	WR	0	0	OFF	Yes
				1	1	PIP	
				2	2	PbyP	
				3	3	PbyP2	
	PIP SIZE	MWSZ	WR	0	0	SMALL	Yes
				1	1	MEDIUM	
				2	2	LARGE	
	Sub screen position	MHPS	WR	0-100	0-100	Adjusts the position of the longer direction.	Yes
		MVPS	WR	0-100	0-100	Adjusts the position of the shorter direction.	
	Sub screen position (Batch specification)	MPOS	WR	0-100,0-100	0-100,0-100	Specify the position in MPOSxxxyyy format (xxx: Longer side, yyy: Shorter side position). Returns a response in (xxx,yyy) format.	Yes
	PIP SOURCE	MWIP	WR	1	1	DIGITAL: DVI	Yes
				2	2	ANALOG1: Analog RGB	
				3	3	COMPONENT: Component	
				4	4	VIDEO: S-Video/Video	
				5	-	Reserved (ERR code returned)	
				6	6	ANALOG2: Analog RGB (BNC)	
	SOUND CHANGE	MWAD	WR	1	1	MAIN	Yes
				2	2	SUB	
	PbyP2 POS	MW2P	WR	0	0	POS1	Yes
				1	1	POS2	
				2	2	POS3	
	AUTO OFF	MOFF	WR	0	0	MANUAL	Yes
				1	1	AUTO	
AUDIO	TREBLE	AUTR	WR	-10-10	-10-10		Yes
	BASS	AUBS	WR	-10-10	-10-10		
	BALANCE	AUBL	WR	-10-10	-10-10		
VOLUME		VOLM	WR	0-31	0-31		Yes
MUTE		MUTE	WR	0	0	OFF	No
				1	1	ON	
OFF TIMER		OFTM	WR	0	0	OFF	No
				1-23	1-23	Set time for OFF TIMER	
		OFTR	R		Value	Remaining time	
ID number	ID no. setting	IDST	W	0-255		Sets the monitor's ID number. ("0" means "no ID number".) Automatically set with IDST001+.	Yes
			R		0-255	Returns the monitor's ID number.	
	ID no. setting (Once)	IDSL	W	1-255		Sets a monitor ID number. This ID number is only effective for the command immediately after this command.	Yes
				0		Clears the ID number if one has been designated.	
	ID no. setting (Subsequent)	IDLK	W	1-255		Sets a monitor ID number. This ID number is effective for the next and all subsequent commands after this command.	Yes
				0		Clears the ID number if one has been designated.	
	ID check	IDCK	W	0	ID: xxx IDLK: yyy	Displays monitor's own ID number and the selected ID number on the screen.	
INFORMATION	MODEL	INF1	R		Value		Yes
	S/N	SRNO	R		Value	Displays the product serial number.	
MODE (Screen mode selection)		BMOD	WR	0	0	STD (Standard)	Yes
				1	1	OFFICE	
				2	2	VIVID	
				3	3	sRGB (When the input mode is ANALOG1/ANALOG2/DIGITAL)	
BRIGHT		VLMP	WR	0-31	0-31	Brightness	Yes
ALL RESET		RSET	W	0			No
OSD DISPLAY		LOSD	WR	0	0	OSD ON	Yes
				1	1	OSD OFF	
ADJUSTMENT LOCK		ALCK	WR	0	0	OFF	Yes
				1	1	1	
				2	2	2	
LED (Power LED)		OFLD	WR	0	0	LED ON	Yes
				1	1	LED OFF	
TEMP ALERT		TALT	WR	0	0	TEMP ALERT OFF	Yes
				1	1	TEMP ALERT OSD&LED	
				2	2	TEMP ALERT LED	
POWER ON DELAY		PWOD	WR	0	0	POWER ON DELAY OFF	Yes
				1-60	1-60	POWER ON DELAY ON	

Function		Command	Direction	Parameter	Reply	Control/Response contents	*
LANGUAGE		LANG	WR	14	14	ENGLISH	Yes
				1	1	DEUTSCH	
				2	2	FRANÇAIS	
				3	3	ITALIANO	
				4	4	ESPAÑOL	
Temperature sensor		DSTA	R		0	Internal temperature normal	Yes
					1	Internal temperature abnormal (Standby mode)	
					2	Internal temperature abnormal (Temperature is normal now, but it was abnormal during operation.)	
					3	Internal temperature abnormal (Brightness of the backlight decreases.)	
					4	Temperature sensor abnormal	
Temperature		ERRT	R		Value	Returns temperature at temperature sensors 1 and 2 in the form of xxx, yyy.	No
Fan error monitoring		ERRF	R		0	Fan normal	Yes
					1	Fan error	
COLOR SYSTEM		CSYS	WR	0-5	0-5	0: AUTO, 1: PAL, 2: PAL-60, 3: SECAM, 4: NTSC 3.58, 5: NTSC 4.43	Yes
MONITOR		STDR	WR	0-1	0-1	0: LANDSCAPE, 1: PORTRAIT	Yes
ENLARGE	Ratio	EMAG	WR	0	0	OFF	No
				1	1	2 x 2	
				2	2	3 x 3	
				3	3	4 x 4	
		EMHV	WR	00-44	00-44	1 x 1 (OFF) to 4 x 4 (“m x n” is expressed as “mn”, where m and n are the numbers of monitors specified for the longer direction and the shorter direction respectively.)	
	BEZEL H	BEZH	WR	0-100	0-100	Bezel width of shorter side	
	BEZEL V	BEZV	WR	0-100	0-100	Bezel width of longer side	
	Image position (M x N)	EPHV	WR	11-44	11-44	Specify values in the order of ENLARGE-POS H/ENLARGE-POS V. (See page 9.)	
	Image position (2 x 2)	EPOS	WR	0-3	0-3	See the description below.	
	Image position (3 x 3)	EPOS	WR	0-8	0-8		
	Image position (4 x 4)	EPOS	WR	0-15	0-15		
Obtain cause of last standby mode		STCA	W	0		Initialization	Yes
			R		0	No detectable error has occurred	
					1	Standby mode by remote control unit	
					2	Standby mode by monitor button	
					3	Standby mode by RS-232C	
					4	Waiting mode by NO SIGNAL (Incl: VESA DPMS/DMPM)	
					5	Standby mode by fan error	
					6	Standby mode by abnormal temperature	
					7	Standby mode by OFF TIMER operation	

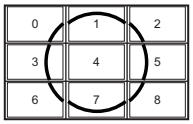
- Image position (EPOS) setting

In horizontal orientation

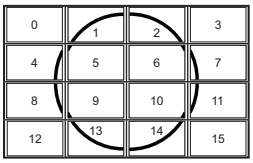
2 x 2



3 x 3

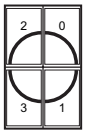


4 x 4

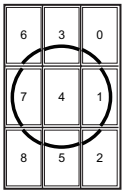


In vertical orientation

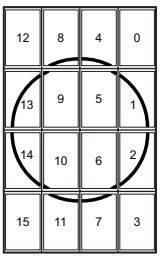
2 x 2



3 x 3



4 x 4



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