



DLP™ Data Display

**PH50 series (SXGA+ models)
XL20/XL50 series (XGA models)
Serial Communications**

November 15, 2005 (REV 4.0)

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1. Product list

Below table 1.1 shows the product list applied to this specifications.

Model group	Model name	Resolution	Lamp	Direction of access	Screen size	Available input board
A	VS-50XL50U	XGA	single	rear	50"	VC-B50KA VC-B50KV
	VS-50XLF50U	XGA	single	front	50"	
	VS-50XLW50U	XGA	changer	rear	50"	
	VS-67XL50U	XGA	single	rear	67"	
	VS-67XLW50U	XGA	changer	rear	67"	
	VS-XLW50U	XGA	changer	-	-	
B	VS-50PH50U	SXGA+	changer	rear	50"	VC-B20KA * VC-B20KV VC-B50KA VC-B50KV
	VS-67PH50U	SXGA+	changer	rear	67"	
	VS-PH40U	SXGA+	changer	-	-	
C	VS-50XL21U	XGA	single	rear	50"	VC-B20KA VC-B20KV
	VS-50XLF20U	XGA	single	front	50"	
	VS-50XLW20U	XGA	changer	rear	50"	
	VS-67XL21U	XGA	single	rear	67"	
	VS-67XLW20U	XGA	changer	rear	67"	
	VS-XL21U	XGA	single	-	-	
	VS-XLW20U	XGA	changer	-	-	

*) In regard to Model group B, VC-B50KA and VC-B50KV will be applied from firmware version "Q02.00A". The combination of the input boards is available only VC-B20KA and VC-B20KV or VC-B50KA and VC-B50KV, the combination of VC-B20KA and VC-B50KV or VC-B50KA and VC-B20KV is not available.

Fig1.1 Product list

2. Communication protocol

2.1. Communication rules

Communication rules	
Flow control	None
Bits per second	19,200bps/9,600bps (Selectable by "Baud rate" menu.)
Parity	None
Data bits	8bits
Stop bits	1bit

2.2. Command character strings

A command is defined by ASCII characters. It consists of a command ID number, a command name and zero or more parameters. A carriage return code (0Dh) is added at the end of each command. A command ID number and command name shall not be delimited. A command name and parameter should be delimited by space (20h). Multiple parameters also should be delimited by space (20h). Case sensitivity is on.

Format: ID Command [_ Parameter1 _ ...] ¥r

Example: 01Pmute _ 1 ¥r

Note: "_" stands for space (20h) and "¥r" stands for carriage return code (0Dh). The maximum number of command characters is 32.

2.3. Command ID

Command ID number represents unit ID of controlled displays by two decimal digit ASCII characters. The unit ID can be set by the dip switch and system menu in the range of 01 to 64.

(In model group C, from firmware version "P01.70A", the range will be 01 to 64.)

When a command with a command ID "00" is sent, all connected displays execute the command at once.

2.4. Integral parameter

1. The range of integer is from -32768 to 32767. It can be stipulated per command.
2. Negative value is showed "-".

2.5. Sequence

Only when the command ID corresponds with their unit ID or when the command ID is "00", displays execute the command.

After receiving a carriage return code (0Dh), the display analyzes and executes the command within 700 msec, and starts to send the result string. If the command ID does not correspond with the unit ID, the display will not return any result string

When the display, which is set MASTER in Dip Switch, receives a command with a command ID "00", it will return the result string. If it is set SINGLE or SLAVE, it will not return any result string.

When the display is processing a command, the controller shall not issue any command. Either receiving a result string or 700 msec after carriage return code transmission, whichever shorter period is regarded as a command processing time.

The controller should issue a command after 50msec or more has passed since received a result string.

* Some commands may take more than 700 msec till the display returns the result string after receiving a command.

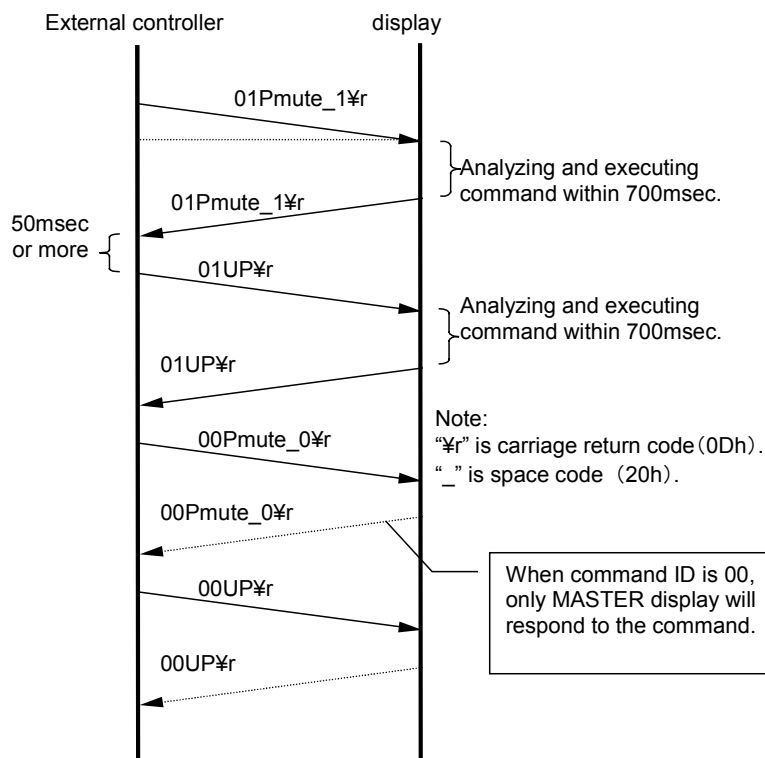


Fig.2.1

2.6. Command return value

Displays return command execution results with ASCII character strings. A result string consists of a command ID number, command name and zero or more return values. A carriage return code is added at the end of each result string. A command ID number and command name shall not be delimited. A command name and return value should be delimited by space (20h). Multiple return values also should be delimited by space (20h).

Command ID number is represented by two decimal digit ASCII characters. If the display responds to a command, it will return character strings with "?". If the display receives an undefined command, it will return received command ID number and "?".

When the display, which is set MASTER in dip switch, receives a command with a command ID "00", it will return the result string that contains the command ID number "00".

Format: ID Command [_ Parameter1 _ ...] ¥r

Example:

Normal response	01Pmute_ 1 ¥r	
Response to error	01Pmute_ ?00 ¥r	Received invalid parameter
	01Pmute_ ?01 ¥r	Received when display is not executable
	01Pmute_ ?busy¥r	Under start-up or shut-down process
	01Pmute_ ?event¥r	Received next command before finishing a command processing.
	01_ ? ¥r	Received undefined command
	01?11 ¥r	In the process of flash memory writing

Note: "_" stands for space (20h) and "¥r" stands for carriage return code (0Dh).

2.7. UP command and update supporting command

Update supporting command is reserved once when command receiving, and executes after UP command receiving.

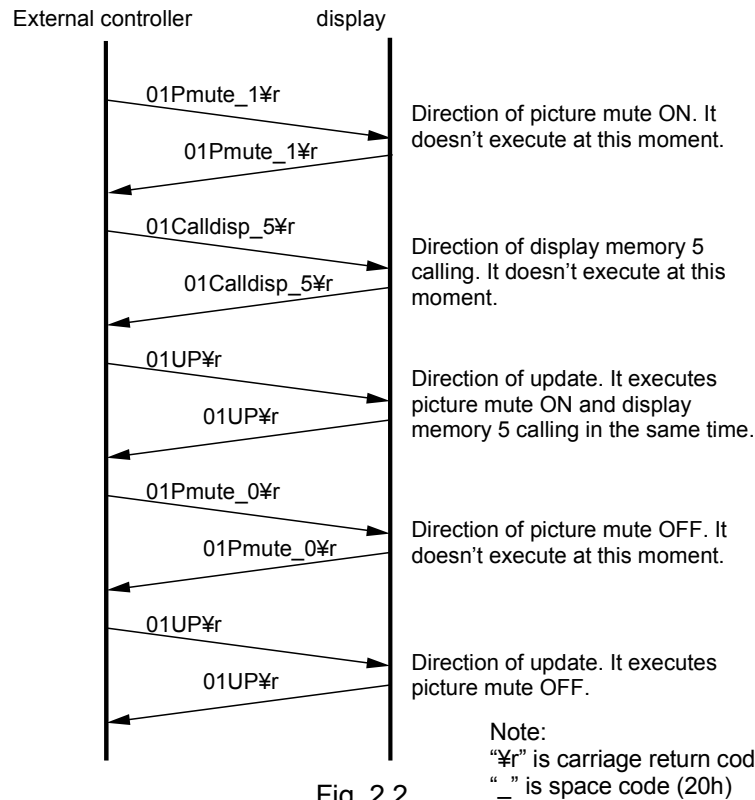


Fig. 2.2

When you obtain current setting values with skipping arguments etc., update supporting commands doesn't require UP command issuing. If you obtained it before UP command receiving, the obtained value is reserved setting value.

2.8. Notice

When you issue adjustment commands, the Power State should be “Power on state” and Input signals used for adjustment should be displayed. (It is necessary to choose an input port by “Pinp” command etc. before adjustment.)

There are three Types of commands. It can be used when the input ports of main unit is chosen, what can be used when the input port of VC-B20KA/VC-B20KV and /VC-B50KA/VC-B50KV are chosen and what can be used irrespective of the selection state of an input port. Refer to Chapter 7 “Remote controllable item list”.

In regard to the commands that depend on the status of selection of the input ports, it is effective only when the input port which specified "Effective inputs" in the text, is selected.

The input port written in the text: as shown in the following.

Mark in text	Explanation
ANALOG	Analog input of the main unit
DIGITAL	Digital input of the main unit
S.ANALOG	Analog input of the optional board(VC-B20KA / VC-B50KA)
S.DIGITAL	Digital input of the optional board(VC-B20KA / VC-B50KA)
COMPOSITE	Composite input of the optional board(VC-B20KV / VC-B50KV)
Y/C	Y/C input of the optional board(VC-B20KV / VC-B50KV)

The commands that depend on the model like the command that is effective only to the lamp changer models are specified by "Effective models" in the text. It is invalid excluding the model that specifies it.

Waiting time of a few seconds (The recommendation: ten seconds) is necessary until the communication becomes effective after turning on the unit (Until entering the standby state). An execution error may be returned when OSD indication such as a remote controller adjustment menu is displayed.

3. Control

3.1. Control commands

The commands that are mainly used in a system operation are follows. See Chapter 5 for detail usage.

3.1.1. vP (Power)

Function: To control turning on/off. Status is automatically saved at shut down, turned off with main sw and power failure.

Format: *ID vP [_ Power]*

<i>Power</i>	Turning on/off control	
	0	During power on state or start-up processing, the state goes to stand-by state.
	1	During stand-by state, it starts start-up process. During power on state, start-up processing or shut down processing, it returns execution failure.
	Omitted	Current status display

Response: *ID vP _ mode*

<i>mode</i>	Current status display	
	0	Stand-by state
	1	Power on state
	2	Start-up processing
	3	Shut down processing
	?00	Invalid parameter
	?01	Execution failure

NOTE:

Since turning on/off operation takes time, if you issue vP command with argument, the display returns execution result string before finishing the command process. The argument in the issued vP command is returned straight into the execution result string. As described above, when you issued vP command with argument, it is recommended to issue vP command without argument after receiving execution result string to check the completion of turning on/off process.

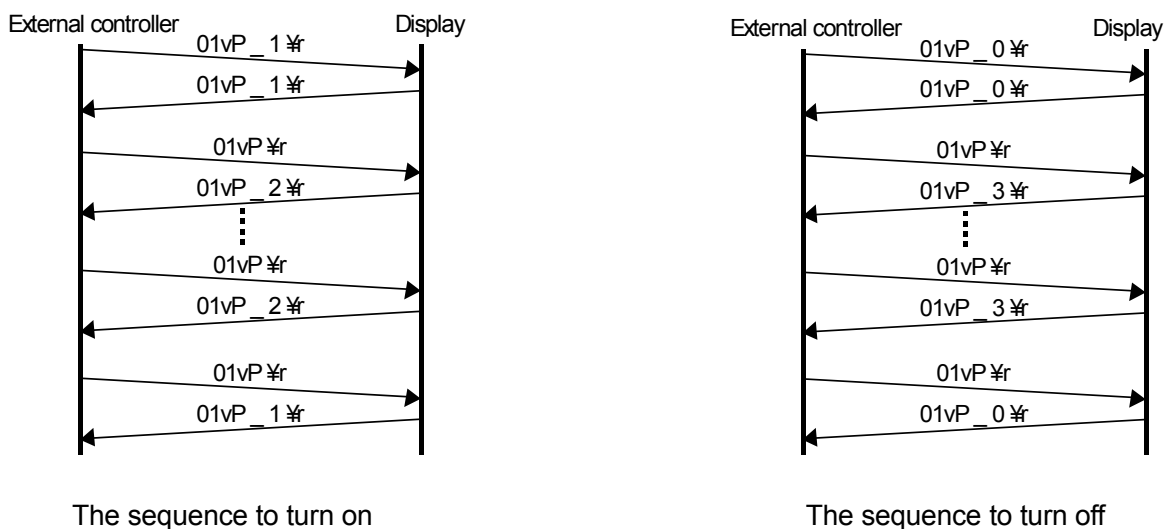


Fig. 3.1

3.1.2. UP (Update)

Function: To execute update. It may take more than 700 msec till the display returns the result string after receiving a command. This command is effective only when the Power State is "Power on state".

Format: *ID UP*

Response: *ID UP [_err]*

<i>err</i>	Response parameter	
	(non)	Updated
	?00	Invalid parameter
	?01	Execution failure

3.1.3. Pmute (Mute)

Function: To control picture mute. It executes after UP command receiving. This command can be accepted during stand-by state. In this case, issuing [vP _ 1] command executes UP command automatically after start-up process. If the mute command is issued during stand-by state, UP command is not required. The status is reset and the mute is canceled by executing [vP _ 0] command or by turning off with main power switch.

Format: *ID Pmute [_Mute]*

<i>Mute</i>	Picture mute on/off control	
	0	Picture mute cancel
	1	Picture mute
	Omitted	Current status display

Response: *ID Pmute _mute*

<i>mute</i>	Current status display (except mute status due to no signal)	
	0	Picture mute cancel
	1	Picture mute status
	?00	Invalid parameter
	?01	Execution failure

3.1.4. Calldisp (Display Memory Call)

Function: To call display memory. It executes after UP command receiving. Status is automatically saved at shut down. This command is effective only when the Power State is "Power on state".

Format: *ID Calldisp [_Mem]*

<i>Mem</i>	Display memory number	
	1 – 256	Memory number designation
	Omitted	Current status display

Response: *ID Calldisp _mem*

<i>mem</i>	Current display memory number	
	0	Memory is not called
	1 – 256	Memory number designation
	?00	Invalid parameter
	?01	Execution failure

3.1.5. Callinp (Input Memory Call)

Function: To call input memory. It executes after UP command receiving. Input port is allocated ANALOG, DIGITAL, S.ANALOG, S.DIGITAL, COMPOSITE or Y/C according to the selected input memory. This command is effective only when the Power State is "Power on state".

Status is automatically saved at shut down

Format: *ID* Callinp [*_ Mem*]

<i>Mem</i>	Input memory number	
	1 – 128	Input memory number designation
	Omitted	Current status display

Response: *ID* Callinp *_ mem*

<i>mem</i>	Current input memory number	
	0	Memory is not called
	1 – 128	Memory number designation
	?00	Invalid parameter
	?01	Execution failure

3.1.6. Ohmpos (H multi position)

Function: To set horizontal expansion ratio of input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV). It executes after UP command receiving. This command is effective only when the Power State is "Power on state". The execution result is saved in display memory by Regdisp command execution.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID* Ohmpos [*_ Pos _ Num*]

<i>Pos</i>	Horizontal screen position	
	1 – 32	Horizontal screen position in expanded image (Left end screen is 1).
	Omitted	Current status display if both Pos and Num are omitted.
<i>Num</i>	Horizontal screen numbers	
	1 – 32	Horizontal screen numbers
	Omitted	Current status display if both Pos and Num are omitted.

Response: *ID* Ohmpos *_ pos* [*_ num*]

<i>pos</i>	Current status display after command executing	
	1 – 32	Horizontal screen position in expanded image
	?00	Invalid parameter
	?01	Execution failure
<i>num</i>	Current status display after command executing	
	1 – 32	Horizontal screen numbers
	Omitted	It is omitted when <i>pos</i> is "?00" or "?01".

3.1.7. Ovmpos (V multi position)

Function: To set vertical expansion ratio of input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV). It executes after UP command receiving. This command is effective only when the Power State is "Power on state". The execution result is saved in display memory by Regdisp command execution.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Ovmpos [_ Pos _ Num]*

<i>Pos</i>	Vertical screen position	
	1 – 32	Vertical screen position in expanded image (Top end screen is 1).
	Omitted	Current status display if both Pos and Num are omitted.
<i>Num</i>	Vertical screen numbers	
	1 – 32	Vertical screen numbers
	Omitted	Current status display if both Pos and Num are omitted.

Response: *ID Ovmpos _ pos [_ num]*

<i>pos</i>	Current status display after command executing	
	1 – 32	Vertical screen position in expanded image
	?00	Invalid parameter
	?01	Execution failure
<i>num</i>	Current status display after command executing	
	1 – 32	Vertical screen numbers
	Omitted	It is omitted when <i>pos</i> is "?00" or "?01".

3.1.8. ST(Status Information)

Function: To get status information of display. Protect detect contents and error detect contents could be obtained by “System” command.

This command is an exclusive command for the lamp changer models.

Format: ID: ST

Response: ID STinfo0 _ info1

<i>info0</i>	To describe 16 bits status as ASCII (HEX) characters.																																				
	0x0000 – 0xffff	<p><i>Function of each bit of info0 is following.</i></p> <table border="1"> <thead> <tr> <th>Bits</th> <th>Function</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>15:11</td> <td>reserved</td> <td></td> </tr> <tr> <td>10</td> <td>protect</td> <td>0:No protect 1:Protect is detected</td> </tr> <tr> <td>9</td> <td>signal</td> <td>0:Input signal is detected 1:No input signal is detected</td> </tr> <tr> <td>8</td> <td>mute</td> <td>0:Normal 1:Mute</td> </tr> <tr> <td>7</td> <td>blowout</td> <td>0:Normal mode (Not lamp burnout operation mode) 1:Lamp burnout operation mode</td> </tr> <tr> <td>6:5</td> <td>Power [1:0]</td> <td>00:Stand-by state 01:normal state(BLOWOUT) 10:Start-up processing 11:Shut down processing</td> </tr> <tr> <td>4</td> <td>change2</td> <td>Standby lamp is “USED” 0:No 1:Yes</td> </tr> <tr> <td>3</td> <td>change1</td> <td>Standby lamp is “JUNK” 0:No 1:Yes</td> </tr> <tr> <td>2</td> <td>change0</td> <td>0:No lamp exchanging prenotice 1: Under lamp exchanging prenotice.</td> </tr> <tr> <td>1</td> <td>lamp</td> <td>0:Lamp changer is under stop 1:Lamp changer is under operation</td> </tr> <tr> <td>0</td> <td>light</td> <td>0:Lamp turn-off 1:Lamp turn-on (Indicated internal processing status)</td> </tr> </tbody> </table>	Bits	Function	Description	15:11	reserved		10	protect	0:No protect 1:Protect is detected	9	signal	0:Input signal is detected 1:No input signal is detected	8	mute	0:Normal 1:Mute	7	blowout	0:Normal mode (Not lamp burnout operation mode) 1:Lamp burnout operation mode	6:5	Power [1:0]	00:Stand-by state 01:normal state(BLOWOUT) 10:Start-up processing 11:Shut down processing	4	change2	Standby lamp is “USED” 0:No 1:Yes	3	change1	Standby lamp is “JUNK” 0:No 1:Yes	2	change0	0:No lamp exchanging prenotice 1: Under lamp exchanging prenotice.	1	lamp	0:Lamp changer is under stop 1:Lamp changer is under operation	0	light
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3	change1	Standby lamp is “JUNK” 0:No 1:Yes																																			
2	change0	0:No lamp exchanging prenotice 1: Under lamp exchanging prenotice.																																			
1	lamp	0:Lamp changer is under stop 1:Lamp changer is under operation																																			
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Bits	Function	Description																																			
15:0	reserved																																				

3.1.9. System (System Information)

Function: To get system information. * items are not available during stand-by state

Format: *ID System _ Para*

<i>Para</i>	Get current status	
	0	Lamp timer value (Current lamp timer value at lamp changer models)
	1	Set timer value
	2	Input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV) installed/ not installed
	3	Firmware version
	4	Hardware (VC-B20KA / VC-B50KA) version *
	5	Hardware (Control CPU of optical unit) version *
	6	(Reserved)
	7	Detected error or abnormal condition. To return error status
	8	Power failure detection
	9	Last selected input port number
	10	Last selected input memory number
	11	Last selected display memory number
	12	(Reserved)
	13	(Reserved)
	14	Model name
	15	Current lamp No. (Lamp changer models only)
	16	A lamp status (Lamp changer models only)
	17	B lamp status (Lamp changer models only)
18	A lamp timer (Lamp changer models only)	
19	B lamp timer (Lamp changer models only)	

Response: *ID System _ para _ info1 _ info2*

<i>para</i>	Item number to obtain		
<i>info1</i>	<i>para</i> =0	Lamp timer value first 4 digits (unit: hour)	
	<i>para</i> =1	Set timer value first 4 digits (unit: hour)	
	<i>para</i> =2	Input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV) installed / not installed	
		0	Not installed
		1	Installed VC-B20KA
		2	Installed both VC-B20KA and VC-B20KV
		3	Installed VC-B50KA
	<i>para</i> =4	4	Installed both VC-B50KA and VC-B50KV
		<i>para</i> =3	Firmware version
	<i>para</i> =4	Hardware (VC-B20KA / VC-B50KA) version	
	<i>para</i> =5	Hardware (Control CPU of optical unit) version	
	<i>para</i> =6	(Reserved)	
	<i>para</i> =7	Last detected error information	
		1	Lamp off
		2	(Not defined)
		3	(Not defined)
		4	Incorrect lamp attachment
		5	Color wheel failure
		6	(Not defined)
		7	Power failure
8		Abnormal temperature(Front maintenance model only)	
9		Lamp power failure (Lamp changer models only)	

		10	Fan 1 failure
		11	Fan 2 failure
		12	Fan 3 failure
		13	Fan 4 failure
		14	Fan 5 failure
		15	Fan 6 failure
		255	No error
	<i>para</i> =8	Power failure detection	
		0	Normal end at last shut down
		1	Abnormal end due to power failure at last shut down
	<i>para</i> =9	Last selected input port number	
		0	ANALOG
		1	DIGITAL
		2	S.ANALOG
		3	S.DIGITAL
		4	COMPOSITE
		5	Y/C
	<i>para</i> =10	Last selected input memory number	
	<i>para</i> =11	Last selected display memory number	
	<i>para</i> =12	(Reserved)	
	<i>para</i> =13	(Reserved)	
	<i>para</i> =14	<i>info1</i> ="Model name"	
	<i>para</i> =15	0	A lamp
		1	B lamp
	<i>para</i> =16,17	0	Empty
		1	New
		2	Used
		3	Junk
		4 – 5	Junk (lamp changer models in model group A and B)
	<i>para</i> =18	Lamp timer value (unit: hour)	
	<i>para</i> =19	Lamp timer value (unit: hour)	
<i>info2</i>	common	?00	Invalid parameter
	common	?01	Execution failure
	<i>para</i> =0	Lamp timer value last 4 digits (unit: hour)	
	<i>para</i> =1	Set timer value last 4 digits (unit: hour)	
	Omitted	It is omitted when <i>para</i> =2 - 17. Also it is omitted when <i>Info1</i> is " ?00 " or " ?01 " .	

Response example:

When lamp timer value is 10hours: 01System _ 0 _ 0 _ 10
01System _ 18 _ 10
When lamp timer value is 9999hours: 01System _ 0 _ 0 _ 9999
01System _ 18 _ 9999
When lamp timer value is 10010hours: 01System _ 0 _ 1 _ 10
01System _ 18 _ 10010

3.1.10. Pinp (Input Select)

Function: To select input port to display on screen. It may take more than 700 msec till the display returns the result string after receiving a command. This command is effective only when the Power State is "Power on state". Status is automatically saved at shut down.

Format: *ID* Pinp[*_ Sel*]

<i>Sel</i>	Input port to display	
	0	ANALOG
	1	DIGITAL
	2	S.ANALOG
	3	S.DIGITAL
	4	COMPOSITE
	5	Y/C
	Omitted	Current status display

Response: *ID* Pinp *_ sel*

<i>sel</i>	Current status display	
	0	ANALOG
	1	DIGITAL
	2	S.ANALOG
	3	S.DIGITAL
	4	COMPOSITE
	5	Y/C
	?00	Invalid parameter
	?01	Execution failure

3.1.11. PLampChange (Lamp Change)

Function: To move standby lamp to lighting position. This command can be accepted during stand-by state. It may take dozens seconds till the execution ends. Status is automatically saved at shut down. This command is an exclusive command for lamp changer models.

Format: *ID* PLampChange *_ Flag*

<i>Flag</i>	Execution flag	
	0	To move standby lamp to lighting position

Response: *ID* PLampChange *_ err*

<i>err</i>	Execution result status	
	0	Normal end
	?00	Invalid parameter
	?01	Execution failure

4. Adjustment

The commands that are mainly used in system set-up and adjustment are follows.

4.1. Commands for Servise menu

4.1.1. PALC (Set Initial Sensor Data)

Function: To get initial brightness value. It cannot be performed for about 5 minutes after lamp lighting. It may take more than 700 msec till the display returns the result string after receiving a command. The execution result is saved in system memory by save command execution.

Format: *ID PALC _ Flag*

<i>Flag</i>	Execution flag	
	0	To get initial brightness value

Response: *ID PALC _ err*

<i>err</i>	Execution result status	
	0	Normal end
	?00	Invalid parameter
	?01	Execution failure

4.1.2. Pmech (Mech Alignment)

Function: To operate Motorized Adjustment Tool. This command is valid only when Motorized Adjustment Tool is attached. The display returns the result string after receiving a command. In model group C, this command is available from firmware version "P01.70A".

Format: *ID Pmech _ Motor _ [Time]*

<i>Motor</i>	Motor number	
	0	H-POSITION
	1	V-POSITION
	2	H-KEYSTONE
	3	V-KEYSTONE
	4	TILT
	5	ZOOM
<i>Time</i>	Operation time	
	1 – 127	To specify the operation time. 1 unit time is 30ms. <i>Motor</i> =0: Image moves to rightward. <i>Motor</i> =1: Image moves to upward. <i>Motor</i> =2: Right side of image is expanded. <i>Motor</i> =3: Upper side of image is expanded. <i>Motor</i> =4: Image rotates clockwise. <i>Motor</i> =5: Image is zoomed in.
	0	Stop
	-1 – -128	To specify the operation time. 1 unit time is 30ms. <i>Motor</i> =0: Image moves to leftward. <i>Motor</i> =1: Image moves to downward. <i>Motor</i> =2: Left side of image is expanded. <i>Motor</i> =3: Lower side of image is expanded. <i>Motor</i> =4: Image rotates counterclockwise. <i>Motor</i> =5: Image is zoomed out.
	Omitted	To return remaining time.

Response: *ID Pmech _ motor [_ time]*

<i>motor</i>	Motor number	
	0	H-POSITION
	1	V-POSITION
	2	H-KEYSTONE
	3	V-KEYSTONE
	4	TILT
	5	ZOOM
	?00	Invalid parameter
?01	Execution failure	
<i>time</i>	Remaining time	
	1 – 127	Operation time. 1 unit time is 30ms.
	0	Stop
	-1 – -128	Operation time. 1 unit time is 30ms.
	Omitted	When “motor” parameter is “ ?00 ” or “ ?01 ” , “time” parameter is omitted.

4.1.3. Pmechst (Mech Adjuster Status)

Function: To get status of Motorized Adjustment Tool. This command is valid only when Motorized Adjustment Tool is attached. In model group C, this command is available from firmware version “P01.70A”.

Format: *ID Pmechst _ Infotype*

<i>Infotype</i>	Get current status	
	0	Status of Motorized Adjustment Tool
	1	Model name information
	2	F/W Version

Response: *ID Pmechst _ infotype [_ info]*

<i>infotype</i>	Current status			
	0	Status of Motorized Adjustment Tool		
	1	Model name information		
	2	F/W Version		
	?00	Invalid parameter		
	?01	Execution failure		
<i>info</i>	To describe 16 bits status as ASCII (HEX) characters.			
	0x0000~ 0xffff	<i>Infotype =0</i>		
		Bits	Description	
		15	Connecting status of Motorized Adjustment Tool. 0: Connected Motorized Adjustment Tool. 1: Unconnected Motorized Adjustment Tool.	
		14	reserved	
		13	0-6, 8-13: Indication of the end of adjustment range: The direction to zoom out	ZOOM
		12	The direction to zoom in	
		11	Counterclockwise direction	TILT
		10	Clockwise direction	
		9	The direction that lower side is expanded	V-KEYSTONE
		8	The direction that upper side is expanded	
		7	Over current is detected.	
		6	Reserved	
		5	The direction that left side is expanded	H- KEYSTONE
		4	The direction that right side is expanded	
		3	Downward	V-POSITION
		2	Upward	
1	Leftward	H-POSITION		

		0	Rightward
		<i>Infotype =1</i>	
		<i>Info</i>	<i>Name</i>
		0	FRONT
		1	REAR
		2	D-FRONT
		3	D-REAR
		4	Reserved
		5	Reserved
		6	Reserved
		7	Reserved
		8	Reserved
		9	Reserved
		<i>Infotype =2</i> F/W Version	
	Omitted	When "infotype" parameter is "?00" or "?01", "info" parameter is omitted.	

4.1.4. PLampTReset (Lamp Timer Reset)

Function: Lamp timer resetting. The execution result is saved in lamp memory by automatically.

Format: *ID* PLampTReset _ *Flag*

<i>Flag</i>	Resetting execution flag
0	Lamp timer reset (Current lamp at lamp changer models.)
1	A lamp timer reset (An exclusive command for lamp changer models.)
2	B lamp timer reset (An exclusive command for lamp changer models.)

Response: *ID* PLampTReset _ *err*

<i>err</i>	Result status
0 - 2	Normal end (Lamp timer has been reset)
?00	Invalid parameter
?01	Execution failure

4.1.5. PLSearch (Lamp Position Search)

Function: To execute lamp position search for brightness optimization. This command can not be accepted during stand-by state. It may take dozens seconds till the execution ends. The execution result is saved in system memory by save command execution. This command is an exclusive command for lamp changer models.

Format: *ID* PLSearch _ *flag*

<i>Flag</i>	Execution flag
0	To search brightest current lamp position. (Not specified lamp number)

Response: *ID* PLSearch _ *err*

<i>err</i>	Execution result status
0	Normal end
?00	Invalid parameter
?01	Execution failure

4.1.6. PSetTColor (Set Target ColorGain)

Function: Target color setting. The execution result is saved in system memory by save command execution.

Format: *ID PSetTcolor _ Flag*

<i>Flag</i>	Setting execution flag	
	0	Target color setting

Response: *ID PSetTcolor _ err*

<i>err</i>	Result status	
	0	Normal end (Target color has been set)
	?00	Invalid parameter
	?01	Execution failure

4.1.7. S3DYC (3D Y/C)

Function: 3D Y/C separation circuit setting.

Effective input: COMPOSITE

Format: *ID S3DYC [_ Mode]*

<i>Mode</i>	3D Y/C separation circuit setting	
	0	3D Y/C separation circuit OFF
	1	3D Y/C separation circuit ON
	Omitted	Current setting value display

Response: *ID S3DYC _ mode*

<i>mode</i>	3D Y/C separation circuit setting	
	0	3D Y/C separation circuit OFF
	1	3D Y/C separation circuit ON
	?00	Invalid parameter
	?01	Execution failure

4.1.8. SALC (Auto luminance control)

Function: Auto luminance control circuit setting. The execution result is saved in system memory by save command execution.

Format: *ID SALC [_ Cont]*

<i>Cont</i>	Auto luminance control circuit setting	
	0	OFF
	1	STOP
	2	RUN
	Omitted	Current setting value display

Response: *ID SALC _ cont*

<i>cont</i>	Auto luminance control circuit setting	
	0	OFF
	1	STOP
	2	RUN
	?00	Invalid parameter
	?01	Execution failure

4.1.9. SALCth (Threshold for auto luminance control)

Function: The luminance degradation value of the lamp that repeats luminance control setting.
 The value that expressed a deteriorated part from initial luminance with % is set. When 40 is set as a parameter, if the luminance of a lamp becomes 40% or less from initial luminance, The display will separate from the group of luminance control. The execution result is saved in system memory by save command execution.

Format: *ID SALCth Mode [_ Level]*

<i>Mode</i>	Mode setting	
	0	Level setting that repeats luminance control
<i>Level</i>	The luminance degradation value of the lamp that repeats luminance control setting.	
	0 – 100	0% – 100%
	Omitted	Current setting value display

Response: *ID SALCth_ mode [_ level]*

<i>mode</i>	Mode setting	
	0	Level setting that repeats luminance control
	?00	Invalid parameter
	?01	Execution failure
<i>level</i>	The luminance degradation value of the lamp that repeats luminance control setting.	
	0 – 100	0% – 100%
	?00	Invalid parameter
	?01	Execution failure
	Omitted	<i>It is omitted when mode is " ?00 " or " ?01 ".</i>

4.1.10. SAcolor (ADV. Color)

Function: Advanced color setting to turn on/off the processing of the colors out of the color gamut.
 The execution result is saved in system memory by save command execution.

Format: *ID SAcolor [_ Sel]*

<i>Sel</i>	Advanced color setting	
	0	OFF
	1	ON
	Omitted	Current setting value display

Response: *ID SAcolor _ sel*

<i>sel</i>	Current advanced color setting	
	0 – 1	Current advanced color setting
	?00	Invalid parameter
	?01	Execution failure

4.1.11. SAdark (ADV.Dark)

Function: Advanced dark setting to turn on/off the function to sense the room brightness and adjust the image contrast. The execution result is saved in system memory by save command execution.

Format: *ID SAdark [_ Sel]*

<i>Sel</i>	Advanced dark setting	
	0	OFF
	1	ON
	Omitted	Current setting value display

Response: *ID SAdark _ sel*

<i>sel</i>	Current advanced dark setting	
	0 – 1	Current advanced dark setting
	?00	Invalid parameter
	?01	Execution failure

4.1.12. SAgain (Gain System)

Function: Gain (white level) value or clamp level setting of analog RGB signal in selected input port. The execution result is saved in system memory by save command execution.

Effective inputs: ANALOG, S.ANALOG

Format: *ID SAgain _ RGB [_ Data]*

<i>RGB</i>	Adjusting color (R,G or B) selecting		
	0	Red gain fine adjusting	
	1	Green gain fine adjusting	
	2	Blue gain fine adjusting	
	3	Main contrast adjusting (S.ANALOG of model group C)	
	4	Red clamp level adjusting	
	5	Green clamp level adjusting	
<i>Data</i>	Gain(white level) adjusting value		
	0 – 127	Gain (white level) adjusting value	ANALOG of model group C
	0 – 255	Gain (white level) adjusting value	ANALOG of model group A , B and S.ANALOG of all models
	0 – 127	Clamp level adjusting value	ANALOG
	0 – 255	Clamp level adjusting value	S.ANALOG
	256	Factory setting	
	Omitted	Current setting value display	

Response: *ID* SAgain_ *rgb* [*_ data*]

<i>rgb</i>	R,G or B selecting		
	0	Red gain fine adjusting	
	1	Green gain fine adjusting	
	2	Blue gain fine adjusting	
	3	Main contrast adjusting (S.ANALOG of model group C)	
	4	Red clamp level adjusting	
	5	Green clamp level adjusting	
	6	Blue clamp level adjusting	
	?00	Invalid parameter	
?01	Execution failure		
<i>data</i>	Current gain value of the color designated in <i>rgb</i> . If 255(factory adjusted value) is designated as the gain value, the factory adjusted value will be returned in the next value operating.		
	0 – 127	Gain (white level) adjusting value	ANALOG of model group C
	0 – 255	Gain (white level) adjusting value	ANALOG of model group A , B and S.ANALOG of all models
	0 – 127	Clamp level adjusting value	ANALOG
	0 – 255	Clamp level adjusting value	S.ANALOG
	Omitted	<i>It is omitted when rgb is " ?00 " or " ?01 " .</i>	

4.1.13. SAnaTerm (Analog Terminate)

Function: Analog input port termination setting. The execution result is saved in system memory by save command execution.

Effective inputs: ANALOG, S.ANALOG

Format: *ID* SAnaTerm_ *Sel* [*_ Data*]

<i>Sel</i>	Analog input port selecting	
	0	ANALOG
	1	S.ANALOG
<i>Data</i>	Termination setting	
	0	Termination OFF
	1	Termination ON
	Omitted	Current setting value display

Response: *ID* SAnaTerm_ *sel* [*_ data*]

<i>sel</i>	Selected analog input port	
	0	ANALOG
	1	S.ANALOG
	?00	Invalid parameter
	?01	Execution failure
<i>data</i>	Current termination setting of analog input port designated in <i>sel</i>	
	0 – 1	Termination setting
	Omitted	<i>It is omitted when sel is "?00" or "?01" .</i>

4.1.14. SAwhite (System Auto White)

Function: Automatic white level adjusting of analog RGB signal in selected input port. The execution result is saved in system memory by save command execution. Full-bit white signal is required to input from the selected analog input port when this command is executed. When *Mode* of *Isig* command is not set to 0, this command is not available. It may take more than 700 msec till the display returns the result string after receiving a command.
Effective inputs: ANALOG, S.ANALOG

Format: *ID SAwhite*

Response: *ID SAwhite [_err]*

<i>err</i>	Results status	
	Omitted	Normal end (automatic adjusting is finished)
	?00	Invalid parameter
	?01	Execution failure

4.1.15. SautoDisp (Auto Display)

Function: Display of stand-by status, failure status, lamp blow-out status by LED indicator and OSD warning indication (Lamp changer models only). The execution result is saved in system memory by save command execution.

Format: *ID SautoDisp _ Sel [_ Mode]*

<i>Sel</i>	Kind of display	
	0	Reserved
	1	Warning indication by OSD (Lamp changer models only)
	2	Display of stand-by status by LED.
	3	Display of failure status by LED.
	4	Display of lamp blow-out status by LED.
	5	Reserved
	Setting of display	
	0	Display OFF
	1	Sel=1: MESSAGE ☀ Sel=2,3,4: Display ON
	2	Sel=1: ☀
	Omitted	Current setting value display

Response: *ID SSautoDisp _ sel [_ mode]*

<i>sel</i>	Kind of display	
	0	Reserved
	1	Warning indication by OSD (Lamp changer models only)
	2	Display of stand-by status by LED.
	3	Display of failure status by LED.
	4	Display of lamp blow-out status by LED.
	5	Reserved
	?00	Invalid parameter
?01	Execution failure	
<i>mode</i>	Setting of display	
	0	Display OFF
	1	Sel=1: MESSAGE ☀ Sel=2,3,4: Display ON
	2	Sel=1: ☀
	Omitted	It is omitted when <i>sel</i> is "?00" or "?01".

4.1.16. Sautopow (Auto Power)

Function: Auto power on setting. The execution result is saved in system memory by save command execution.

Format: *ID Sautopow [_ Mode]*

<i>Mode</i>	Auto power on setting.	
	0	It follows last power. (The item saved in the last memory)
	1	Auto power ON
	Omitted	Current setting value display

Response: *ID Sautopow _ mode*

<i>mode</i>	Auto power on setting.	
	0	It follows last power. (The item saved in the last memory)
	1	Auto power ON
	?00	Invalid parameter
	?01	Execution failure

4.1.17. Sblack (Black Level)

Function: Black level setting. The execution result is saved in system memory by save command execution.

Format: *ID Sblack _ RGB [_ Data]*

<i>RGB</i>	Color (R, G or B) selecting in black	
	0	Red
	1	Green
	2	Blue
<i>Data</i>	Black level adjusting value	
	0 – 127	Black level adjusting value
	Omitted	Current setting status display

Response: *ID Sblack _ rgb [_ data]*

<i>rgb</i>	Color (R, G or B) selecting in black	
	0	Red
	1	Green
	2	Blue
	?00	Invalid parameter
	?01	Execution failure
<i>data</i>	Current black level adjusting value designated in <i>rgb</i>	
	0 – 127	Black level adjusting value
	Omitted	It is omitted when <i>rgb</i> is “?00” or “?01”.

4.1.18. Sblank (Blanking)

Function: White boost setting to process the color wheel blanking. The execution result is saved in system memory by save command execution.

Format: *ID Sblank [_ Cont]*

<i>Cont</i>	White boost setting	
	0	OFF
	1 – 10	White boost setting value
	Omitted	Current setting value display

Response: *ID Sblank _ cont*

<i>cont</i>	Current white boost setting value	
	0	OFF
	1 – 10	White boost setting value
	?00	Invalid parameter
	?01	Execution failure

4.1.19. Scablelength(Cable length)

Function: Setting of the signal cable length connected with input port “DIGITAL”.

When using long cable, set “Long”. If there is noise in image, set to eliminate the noise.

The execution result is saved in system memory by save command execution.

Effective models and inputs: DIGITAL, S-DIGITAL (VC-B50KA) of model group A, B

Format: *ID Scablelength _ Port [_ Length]*

<i>Port</i>	Select of input port	
	0	DIGITAL
	1	S-DIGITAL (VC-B50KA)
<i>Length</i>	Cable length setting	
	0	NORMAL
	1	LONG
	Omitted	Current setting value display

Response: *ID Scablelength _ port [_ length]*

<i>port</i>	Selected input port	
	0	DIGITAL
	1	S-DIGITAL(VC-B50KA)
	?00	Invalid parameter
	?01	Execution failure
<i>length</i>	Current cable length setting	
	0	NORMAL
	1	LONG
	Omitted	It is omitted when <i>port</i> is “?00” or “?01”.

4.1.20. SCmode (Change Mode)

Function: Lamp change mode setting. The execution result is saved in system memory by save command execution. This command is an exclusive command for lamp changer models.

Format: *ID SCmode _ [Mode]*

<i>Mode</i>	Change mode	
	0	OFF
	1	NORMAL
	2	LONG
	Omitted	Current setting value display

Response: *ID SCmode _ mode*

<i>mode</i>	Current change mode	
	0	OFF
	1	NORMAL
	2	LONG
	?00	Invalid parameter
	?01	Execution failure

4.1.21. Scmtxset (Color Matrix set)

Function: Detail color matrix setting. The execution result is saved in system memory by save command execution.

Format: *ID Scmtxset _ Sel [_ Data]*

<i>Sel</i>	Color matrix parameter	
	0	SATURATION
	1	RED
	2	YELLOW
	3	GREEN
	4	CYAN
	5	BLUE
	6	MAGENTA
<i>Data</i>	Setting value	
	-5 – 5	Effective value range in the case that Sel is 0 (SATURATION)
	-20 – 20	Effective value range in the case that Sel is NOT 0 (SATURATION)
	Omitted	Current setting value display

Response: *ID Scmtxset _ sel [_ data]*

<i>sel</i>	Color matrix parameter	
	0 – 6	Color matrix parameter selecting
	?00	Invalid parameter
	?01	Execution failure
<i>data</i>	Current color matrix parameter designated in sel/	
	-5 – 5	In the case that sel is 0 (SATURATION)
	-20 – 20	In the case that sel is NOT 0 (SATURATION)
	Omitted	It is omitted when sel is “?00” or “?01”.

4.1.22. Sdirection (Direction)

Function: The function: DIRECTION setting. If *Cnt* parameter is set 0(*Cnt*=0), the warning indication to induce the filter cleaning and the temperature warning indication become invalid. If you set to *Cnt*=1 by using this command, setting value of the SetFilter command is changed to *time*=4000 and If you set to *Cnt*=0, setting value of the SetFilter command is changed to *time*=0 automatically. It is preferable to reset the filter timer value by using the Sfilter command when you set the parameter to *Cnt*=1.

The execution result is saved in system memory by save command execution.

Effective models: model group A, C

Format: *ID* Sdirection [*_ Cnt*]

<i>Cnt</i>	DIRECTION setting	
	0	REAR
	1	FRONT
	Omitted	Current setting value display

Response: *ID* Sdirection *_ cnt*

<i>cnt</i>	Current DIRECTION setting	
	0	REAR
	1	FRONT
	?00	Invalid parameter
	?01	Execution failure

4.1.23. Sdisp (Display Mode)

Function: Display mode (with/without pixel superimposition) setting. The pending commands are updated when this command is executed. The execution result is saved in system memory by save command execution. This command is an exclusive command for the input boards

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID* Sdisp [*_ Sel*]

<i>Sel</i>	Display mode (with/without pixel superimposition) setting	
	0	Without pixel superimposition
	1	With pixel superimposition
	Omitted	Current setting value display

Response: *ID* Sdisp *_ sel*

<i>sel</i>	Current display mode (with/without pixel superimposition) setting	
	0	Without pixel superimposition
	1	With pixel superimposition
	?00	Invalid parameter
	?01	Execution failure

4.1.24. Sdither (Dither)

Function: Dither setting. The execution result is saved in system memory by save command execution.

Format: ID Sdither [_ Cnt]

Cnt	Dither setting	
	0	Dither OFF
	1	Dither OFF
	Omitted	Current setting value display

Response: Sdither_ cnt

cnt	Current dither setting	
	0	Dither OFF
	1	Dither OFF
	?00	Invalid parameter
	?01	Execution failure

4.1.25. SelCSC (Select CSC)

Function: CSC pattern selecting. This command is invalid when auto luminance control function (SALC command) is set STOP or RUN. The execution result is saved in system memory by save command execution.

Format: ID SelCSC [_ Sel]

Sel	CSC pattern number	
	0	CSC adjusting function OFF
	1	CSC pattern 1
	2	CSC pattern 2
	Omitted	Current setting status display

Response: ID SelCSC _ sel

sel	Current CSC pattern number	
	0 – 2	Current CSC pattern number (0 is CSC adjusting function OFF.)
	?00	Invalid parameter
	?01	Execution failure

4.1.26. SelW (Select White Balance)

Function: White balance selecting. This command is invalid when auto luminance control function (SALC command) is set STOP or RUN. The execution result is saved in system memory by save command execution.

Format: ID SelW [_ Sel]

Sel	White balance selecting	
	0	LOW
	1	MIDDLE
	2	HIGH
	Omitted	Current setting status display

Response: ID SelW _ sel

sel	Current white balance selecting	
	0 – 2	Current white balance
	?00	Invalid parameter
	?01	Execution failure

4.1.27. SetCSC (CSC)

Function: CSC adjusting in Current CSC pattern (CSC1 or CSC2). This command is invalid when CSC is set OFF or auto luminance control function (SALC command) is set STOP or RUN. The execution result is saved in system memory by save command execution.

Format: *ID* SetCSC _ *Sel1* _ *Sel2* [_ *Data*]

<i>Sel1</i> <i>Sel2</i>			<i>Sel2</i>		
			0	1	2
	<i>Sel1</i>	0	CSC11 (R – R)	CSC21 (R – G)	CSC31 (R – B)
		1	CSC12 (G – R)	CSC22 (G – G)	CSC32 (G – B)
		2	CSC13 (B – R)	CSC23 (B – G)	CSC33 (B – B)
<i>Data</i>	CSC adjusting value				
	0 – 1023		Adjusting value in CSC11, CSC22 and CSC33		
	-255 – 255		Adjusting value in CSC12, CSC13, CSC21, CSC23, CSC31 and CSC32		
	Omitted		Current setting value display		

Response: *ID* SetCSC _ *sel1* [_ *sel2* _ *data*]

<i>sel1</i>	CSC adjusting value selecting (refer to Format)	
	0 – 2	CSC adjusting value selecting (refer to Format)
	?00	Invalid parameter
	?01	Execution failure
<i>sel2</i>	CSC adjusting parameter selecting (refer to Format)	
	0 – 2	CSC adjusting value selecting (refer to Format)
	Omitted	It is omitted when <i>sel1</i> is “?00” or “?01”.
<i>data</i>	Current CSC adjusting value selected in <i>sel1</i> and <i>sel2</i> .	
	0 – 1023 or -255 – 255	Current CSC adjusting value
	Omitted	It is omitted when <i>sel1</i> is “?00” or “?01”.

4.1.28. SetFilter (Filter Warning Setting)

Function: To set the hours of interval to show “CHECK FILTER” message.

The execution result is saved in system memory by save command execution. After setting the warning timer value by using this command, if you change the *Sdirection* parameter to *Cnt*=1, the warning timer setting is changed to *time*=4000 and if you change the *Sdirection* parameter to *Cnt*=0, the warning timer setting is changed to *time*=0 automatically. This command is an exclusive command for front access model.

Format: *ID* SetFilter [_ *Time*]

<i>Time</i>	Warning timer setting	
	0 – 30000	Setting time (unit : hour) A setting unit is 100 hours.
	omitted	Current setting status display

Response: *ID* SetFilter _ *time*

<i>time</i>	Warning timer setting	
	0 – 30000	Setting time (unit : hour)
	?00	Invalid parameter
	?01	Execution failure

4.1.29. SetGrad (Set Gradation)

Function: Gradation value setting. This command is invalid when auto luminance control function (SALC command) is set STOP or RUN. The execution result is saved in system memory by save command execution.

Format: *ID SetGrad _ Col _ Para [_ Data]*

<i>Col</i>	Adjusting color selecting	
	0	White
	1	Red
	2	Green
	3	Blue
<i>Para</i>	Adjusting parameter selecting	
	0	Top
	1	Bottom
	2	Left
	3	Right
	4	Top/Left
	5	Top/Right
	6	Bottom/Left
7	Bottom/Right	
<i>Data</i>	Gradation adjusting value	
	-128 – 127	Gradation adjusting value
	Omitted	Current setting value display

Response: *ID SetGrad _ col [_ para _ data]*

<i>col</i>	Adjusting color selecting	
	0	White
	1	Red
	2	Green
	3	Blue
	?00	Invalid parameter
	?01	Execution failure
	?04	Adjustment was collapsed (<i>Data</i> value remains)
<i>para</i>	Adjusting parameter selecting	
	0 – 7	Parameter selecting (refer to Format)
	Omitted	It is omitted when <i>para</i> is “?00”, “?01” or “? _ 04”.
<i>data</i>	Current gradation adjusting value designated in <i>para</i>	
	-128 – 127	Gradation adjusting value
	Omitted	It is omitted when <i>para</i> is “?00”, “?01” or “? _ 04”.

4.1.30. SetW (White Balance)

Function: White balance adjusting in Current white balance pattern (LOW, MIDDLE or HIGH). This command is invalid when auto luminance control function (SALC command) is set STOP or RUN. The execution result is saved in system memory by save command execution.

Format: *ID SetW _ RGB [_ Data]*

<i>RGB</i>	Color (R, G or B) selecting in white	
	0	Red
	1	Green
	2	Blue
<i>Data</i>	White balance adjusting value	
	0 – 1000	White balance adjusting value
	Omitted	Current setting value display

Response: *ID SetW _ rgb [_ data]*

<i>rgb</i>	Color (R, G or B) selecting in white	
	0	Red
	1	Green
	2	Blue
	?00	Invalid parameter
	?01	Execution failure
<i>data</i>	Current white balance adjusting value designated in <i>rgb</i>	
	0 – 1000	White balance adjusting value
	Omitted	It is omitted when <i>rgb</i> is “?00” or “?01”.

4.1.31. Sfilter (Filter Timer Read / Timer Reset)

Function: To get and reset filter timer value. “Check Filter” warning is non-displayed temporary by the timer value resetting. Status is automatically saved at shut down. This command is an exclusive command for front access model.

Format: *ID Sfilter [_ Flag]*

<i>Flag</i>	Reset execution flag	
	0	Resetting of filter timer value
	Omitted	Current filter timer value display

Response: *ID Sfilter _ flag*

<i>flag</i>	Execution status	
	0	Normal end (Filter timer has been reset)
	0–30000	Filter timer value
	?00	Invalid parameter
	?01	Execution failure

4.1.32. Sflip (Image Flip)

Function: Image flip setting. The execution result is saved in system memory by save command execution.

Format: *ID Sflip [_ Sel]*

<i>Sel</i>	Image flip setting	
	0	Horizontal and vertical flip image*
	1	Vertical flip image*
	2	Horizontal flip image*
	3	Normal image*
Omitted	Current setting status display	

*: In the case of rear access models

Response: *ID Sflip _ sel*

<i>sel</i>	Current image flip setting	
	0 – 3	Current mage flip setting
	?00	Invalid parameter
	?01	Execution failure

4.1.33. Sgamma (Gamma Select)

Function: Gamma table selecting. The execution result is saved in system memory by save command execution.

Format: *ID Sgamma [_ Sel]*

<i>Sel</i>	Gamma table number	
	1 – 5	Gamma table number
	Omitted	Current setting value display

Response: *ID Sgamma _ sel*

<i>sel</i>	Selected gamma table number	
	1 – 5	Selected gamma table number
	?00	Invalid parameter
	?01	Execution failure

4.1.34. SHotEx(Hot exchange)

Function: Hot exchange setting. The execution result is saved in system memory by save command execution. This command is an exclusive command for the lamp changer models.

Format: *ID SHotEx [_ Sel]*

<i>Sel</i>	Hot exchange setting	
	0	FORBID
	1	ALLOW
	Omitted	Current setting status display

Response: *ID ShotEx _ sel*

<i>sel</i>	Current setting	
	0	FORBID
	1	ALLOW
	?00	Invalid parameter
	?01	Execution failure

4.1.35. Shpos (H position)

Function: Offset value of horizontal position setting. The pending commands are updated when this command is executed. This command is invalid when display mode (Sdisp command) is set without pixel superimposition. The execution result is saved in system memory by save command execution.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Shpos [_ Offset]*

<i>Offset</i>	Offset value of horizontal position	
	-16 – 16	Offset value of horizontal position
	Omitted	Current setting value display

Response: *ID Shpos _ offset*

<i>offset</i>	Current offset value of horizontal position	
	-16 – 16	Offset value of horizontal position
	?00	Invalid parameter
	?01	Execution failure

4.1.36. Shsize (H size)

Function: Offset value of horizontal size setting. The pending commands are updated when this command is executed. This command is invalid when display mode (Sdisp command) is set without pixel superimposition. The execution result is saved in system memory by save command execution.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Shsize [_ Offset]*

<i>Offset</i>	Offset value of horizontal size	
	-16 – 16	Offset value of horizontal size
	Omitted	Current setting value display

Response: *ID Shsize _ offset*

<i>offset</i>	Current offset value of horizontal size	
	-16 – 16	Offset value of horizontal size
	?00	Invalid parameter
	?01	Execution failure

4.1.37. Slampout (Lamp out mode)

Function: Lamp out mode setting. To select lamp burnout operation mode or normal mode when lamp burnout is detected. If the input board is not installed in model group A and B, display shuts down regardless of the setting. The execution result is saved in system memory by save command execution.

Format: *ID Slampout [_ Mode]*

<i>Mode</i>	Operation mode	
	0	Normal mode (not lamp burnout mode)
	1	Lamp burnout operation mode
	Omitted	Current setting value display

Response: *ID Slampout _ mode*

<i>mode</i>	Operation mode	
	0	Normal mode (not lamp burnout mode)
	1	Lamp burnout operation mode
	?00	Invalid parameter
	?01	Execution failure

The lamp burnout operation mode is the status that does not become stand-by state when the lamp is burnout. In this mode, digital out and commands are available.

4.1.38. Slmode (Lamp Mode)

Function: Lamp mode setting. The execution result is saved in system memory by save command execution.

Effective models: model group C

Format: *ID Slmode _ [Mode]*

<i>Mode</i>	Lamp mode	
	0	NORMAL
	1	LONG LIFE
	2	F-REDUCTION
	Omitted	Current setting value display

Response: *ID Slmode _ mode*

<i>mode</i>	Current lamp mode	
	0	NORMAL
	1	LONG LIFE
	2	F-REDUCTION
	?00	Invalid parameter
	?01	Execution failure

4.1.39. Slpower (Lamp Power)

Function: Lamp power mode setting. The execution result is saved in system memory by save command execution.

Effective models: model group A, B (excluding VS-PH40U), C

Format: *ID Slpower _ [Mode]*

<i>Mode</i>	Lamp power mode	
	0	Normal mode
	1	Bright mode
	Omitted	Current setting value display

Response: *ID Slampout _ mode*

<i>mode</i>	Lamp power mode	
	0	Normal mode
	1	Bright mode
	?00	Invalid parameter

4.1.40. Sresol (Resolution)

Function: Resolution setting. The execution result is saved in system memory by save command execution.

Effective models: model group B

Format: *ID Sresol _ [Sel]*

<i>Sel</i>	Resolution setting	
	0	SXGA+
	1	SXGA
	Omitted	Current setting value display

Response: *ID Sresol _ sel*

<i>sel</i>	Resolution setting	
	0	SXGA+
	1	SXGA
	?00	Invalid parameter
	?01	Execution failure

4.1.41. Startmem (Start Memory)

Function: Start memory setting. The execution result is saved in system memory by save command execution.

Format: *ID Startmem [_ Mem]*

<i>Mem</i>	Start memory number direction	
	0	Using last memory when start-up
	1 – 256	Display memory number when start-up
	Omitted	Current setting value display

Response: *ID Startmem _ mem*

<i>Mem</i>	Start memory number setting value	
	0	Using last memory when start-up
	1 – 256	Display memory number when start-up
	?00	Invalid parameter
	?01	Execution failure

4.1.42. Svpos (V position)

Function: Offset value of vertical position setting. The pending commands are updated when this command is executed. This command is invalid when display mode (Sdisp command) is set without pixel superimposition. The execution result is saved in system memory by save command execution.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Svpos [_ Offset]*

<i>Offset</i>	Offset value of vertical position	
	-16 – 16	Offset value of vertical position
	Omitted	Current setting value display

Response: *ID Svpos _ offset*

<i>offset</i>	Current offset value of vertical position	
	-16 – 16	Offset value of vertical position
	?00	Invalid parameter
	?01	Execution failure

4.1.43. Svsize (V size)

Function: Offset value of vertical size setting. The pending commands are updated when this command is executed. This command is invalid when display mode (Sdisp command) is set without pixel superimposition. The execution result is saved in system memory by save command execution.

Effective input:: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Svsize [_ Offset]*

<i>Offset</i>	Offset value of vertical size	
	-16 – 16	Offset value of vertical size
	Omitted	Current setting value display

Response: *ID Svsize _ offset*

<i>offset</i>	Current offset value of vertical size	
	-16 – 16	Offset value of vertical size
	?00	Invalid parameter
	?01	Execution failure

4.1.44. Syssync (System Sync Mode)

Function: System sync (50Hz/60Hz) setting. The pending commands are updated when this command is executed. The execution result is saved in system memory by save command execution.

Format: *ID Syssync [_ Sel]*

<i>Sel</i>	System sync setting	
	0	50Hz
	1	60Hz
	Omitted	Current setting status display

Response: *ID Syssync _ sel*

<i>sel</i>	Current system sync setting	
	0	50Hz
	1	60Hz
	?00	Invalid parameter
	?01	Execution failure

4.1.45. Test (Test Pattern)

Function: Test pattern displaying.

Format: *ID Test [_ Sel]*

<i>Sel</i>	Test pattern number selecting	
	0	Test pattern OFF
	1	Full-bit white
	2	Cross hatch
	3	Adjusting white
	4	Distortion
	5	Blue60
	6	Blue60 frame
	7	Gray30
	8	Gray30 frame
	9	Gray08
	10	Gray08 frame
	11	Blue40
	12	Blue50
	13	Gray40
	14	Gray50
	15	Contrast measurement pattern
	16	Lamp
	17	Color bar
	18	Distortion 2
Omitted	Current setting status display	

Response: *ID Test _ sel*

<i>sel</i>	Selected test pattern number	
	0 – 18	Selected test pattern number
	?00	Invalid parameter
	?01	Execution failure

4.1.46. Tstmute (Test Mute)

Function: Each color (R,G and B) muting. This command is available when test pattern number 0, 1, 2 ,3 and 7.

Format: *ID Tstmute _ Sel [_ Mute]*

<i>Sel</i>	Color selecting to mute	
	0	Red
	1	Green
	2	Blue
<i>Mute</i>	Color mute status selected in <i>Sel</i>	
	0	Mute cancel
	1	Mute
	Omitted	Current setting status display

Response: *ID Tstmute _ sel [_ mute]*

<i>sel</i>	Selected color	
	0 – 2	Mute color
	?00	Invalid parameter
	?01	Execution failure
<i>mute</i>	Selected color mute status	
	0	Mute cancel
	1	Mute
	Omitted	It is omitted when <i>sel</i> is “?00” or “?01”.

4.1.47. save (System Memory Save)

Function: system memory setting value saving. It may take more than 700 msec till the display returns the result string after receiving a command.

Format: *ID save*

Response: *ID save [_ err]*

<i>err</i>	Result status	
	Omitted	Normal end (saving is finished)
	?00	Invalid parameter
	?01	Execution failure

4.2. Input signal adjustment commands

4.2.1. Asgain (Gain)

Function: Gain (white level) value or clamp level setting of analog RGB signal in selected input port. The execution result is saved in input memory by Reginp command execution.

Effective inputs: ANALOG, S.ANALOG

Format: *ID Asgain _ RGB [_ Data]*

<i>RGB</i>	Adjusting color (R,G or B) selecting			
	0	Red gain fine adjusting		
	1	Green gain fine adjusting		
	2	Blue gain fine adjusting		
	3	Main contrast adjusting (S.ANALOG of model group C)		
	4	Red clamp level adjusting		
	5	Green clamp level adjusting		
	6	Blue clamp level adjusting		
<i>Data</i>	Gain(white level) adjusting value			
	0 – 127	Gain (white level) adjusting value	ANALOG of model group C	
	0 – 255	Gain (white level) adjusting value	ANALOG of Model group A, B and S.ANALOG of all models	
	0 – 127	Clamp level adjusting value	ANALOG	
	0 – 255	Clamp level adjusting value	S.ANALOG	
		256	System memory setting	
		Omitted	Current setting value display	

Response: *ID Asgain _ rgb [_ data]*

<i>rgb</i>	R,G or B selecting			
	0	Red gain fine adjusting		
	1	Green gain fine adjusting		
	2	Blue gain fine adjusting		
	3	Main contrast adjusting (S.ANALOG of model group C)		
	4	Red clamp level adjusting		
	5	Green clamp level adjusting		
	6	Blue clamp level adjusting		
		?00	Invalid parameter	
		?01	Execution failure	
<i>data</i>	Current gain value of the color designated in rgb. If 255(system memory setting value) is designated as the gain value, the system memory setting value will be returned in the next value operating.			
	0 – 127	Gain (white level) adjusting value	ANALOG of model group C	
	0 – 255	Gain (white level) adjusting value	ANALOG of model group A, B and S.ANALOG of all models	
	0 – 127	Clamp level adjusting value	ANALOG	
	0 – 255	Clamp level adjusting value	S.ANALOG	
		Omitted	<i>It is omitted when rgb is " ?00 " or " ?01 ".</i>	

4.2.2. Aswhite (Auto White)

Function: Automatic white level adjusting of analog RGB signal in selected input port. The execution result is saved in input memory by Reginp command execution. Full-bit white signal is required to input from the selected analog input port when this command is executed. When *Mode* of Isig command is not set to 0, this command is not available. It may take more than 700 msec till the display returns the result string after receiving a command.
Effective inputs: ANALOG, S.ANALOG

Format: *ID* Aswhite

Response: *ID* Aswhite [*_ err*]

<i>err</i>	Results status	
	Omitted	Normal end (automatic adjusting is finished)
	?00	Invalid parameter
	?01	Execution failure

4.2.3. Deldisp (Delete Display memory)

Function: Display memory deleting. It may take more than 700 msec till the display returns the result string after receiving a command.

Format: *ID* Deldisp *_ MemNo*

<i>MemNo</i>	Display memory number to be deleted	
	1 – 256	Display memory number

Response: *ID* Deldisp *_ memno*

<i>memno</i>	Deleted display memory number	
	1 – 256	Display memory number
	?00	Invalid parameter
	?01	Execution failure

4.2.4. Delinp (Delete Input Memory)

Function: Input memory deleting. It may take more than 700 msec till the display returns the result string after receiving a command.

Format: *ID* Delinp *_ MemNo*

<i>MemNo</i>	Input memory number to be deleted	
	1 – 128	Input memory number

Response: *ID* Delinp *_ memno*

<i>memno</i>	Deleted input memory number	
	1 – 128	Input memory number
	?00	Invalid parameter
	?01	Execution failure

4.2.5. IPconv (Pixel Conversion)

Function: Pixel conversion filter setting. The execution result is saved in input memory by Reginp command execution.

Format: *ID IPconv [_ Mode]*

<i>Mode</i>	Pixel conversion mode setting	
	0 – 1	ANALOG, DIGITAL of model group C
	0 – 2	ANALOG, DIGITAL of model group A, B
	0 – 2	S.ANALOG,S.DIGITAL,COMPOSITE,Y/C
Omitted	Current setting status display	

Response: *ID IPconv _ mode*

<i>mode</i>	Current pixel conversion mode setting value	
	0 – 2	Pixel conversion mode setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.6. Iaperture (Aperture)

Function: Aperture setting. The execution result is saved in input memory by Reginp command execution.

Format: *ID Iaperture [_ Mode]*

<i>Mode</i>	Aperture setting	
	0	Aperture OFF
	1 – 4	Aperture setting value
	Omitted	Current setting status display

Response: *ID Iaperture _ mode*

<i>mode</i>	Current aperture setting value	
	0	Aperture OFF
	1 – 4	Aperture setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.7. Iaspect (Aspect Ratio)

Function: Aspect ratio setting for input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV). The execution result is saved in input memory by Reginp command execution.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Iaspect [_ Mode]*

<i>Mode</i>	Aspect ratio setting	
	0	4:3
	1	5:4
	2	16:9
	Omitted	Current setting status display

Response: *ID Iaspect _ mode*

<i>mode</i>	Current aspect ratio setting value	
	0	4:3
	1	5:4
	2	16:9
	?00	Invalid parameter
	?01	Execution failure

4.2.8. Ibrt (Brightness)

Function: Brightness adjusting. The execution result is saved in input memory by Reginp command execution.

Format: *ID Ibrt [_ Brt]*

<i>Brt</i>	Brightness setting value	
	-50 – 50	Brightness setting value
	Omitted	Current setting value display

Response: *ID Ibrt _ brt*

<i>brt</i>	Current brightness setting value	
	-50 – 50	Current brightness setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.9. Iclpos (Clamp Position)

Function: Clamp pulse position setting in analog RGB input signal. The execution result is saved in input memory by Reginp command execution.

Effective inputs: ANALOG, S.ANALOG

Format: *ID Iclpos [_ Pos]*

<i>Pos</i>	Clamp pulse position setting value	
	0 – 15	ANALOG of model group C
	0 – 255	ANALOG of model group A, B and S.ANALOG of all models
	0 – 255	S.ANALOG
	Omitted	Current setting value display

Response: *ID Iclpos _ pos*

<i>pos</i>	Current clamp pulse position setting value	
	0 – 255	Clamp pulse position setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.10. Iclrng (Clock Range)

Function: Sampling frequency range setting in analog input signal. The execution result is saved in input memory by Reginp command execution.

Effective inputs: ANALOG, S.ANALOG

Format: ID Iclrng [_ Range]

Range	Sampling frequency range		
1	25M – 55MHz	When ANALOG of model group C is selected.	
2	Reserved		
3	Reserved		
4	55M – 65MHz		
5	Reserved		
6	65M – 95MHz		
7	Reserved		
8	95M – 115MHz		
0 – 4	Reserved	When ANALOG of model group A, B is selected.	
5	25M – 32MHz		
6 – 7	Reserved		
8	32M – 45MHz		
9	45M – 64MHz		
10 – 12	Reserved		
13	64M – 80MHz		
14	80M – 100MHz		
15	Auto setting		
16 – 17	forbidden setting		
18	110M – 122MHz	When S.ANALOG of VC-B20KA is selected.	
0	Auto setting		
1 – 4	Reserved		
5	21.25[MHz] – 27.5[MHz]		
6	27.5[MHz] – 35[MHz]		
7	35[MHz] – 38.75[MHz]		
8	38.75[MHz] – 40[MHz]		
9	40[MHz] – 42.5[MHz]		
10	42.5[MHz] – 55[MHz]		
11	55[MHz] – 70[MHz]		
12	70[MHz] – 77.5[MHz]		
13	77.5[MHz] – 80[MHz]		
14	80[MHz] – 85[MHz]		
15	85[MHz] – 110[MHz]		
16	110[MHz] – 140[MHz]		
17	140[MHz] – 155[MHz]		
18	155[MHz] – 165[MHz]		
1	– 20[MHz]		When S.ANALOG of VC-B50KA is selected.
2	20[MHz] – 25[MHz]		
3	28[MHz] – 38[MHz]		
4	38[MHz] – 45[MHz]		
5	Reserved		
6	Reserved		
7	45[MHz] – 61[MHz]		
8	61[MHz] – 77[MHz]		
9	77[MHz] – 82[MHz]		

	10	Reserved	
	11	Reserved	
	12	82[MHz] – 122[MHz]	
	13	122[MHz] – 146[MHz]	
	14	Reserved	
	15	Reserved	
	16	146[MHz] –	
	17	Reserved	
	18	Reserved	
	Omitted	Current setting value display	

Response: *ID* *Iclrng _ range*

<i>range</i>	Current sampling frequency range setting	
	1 – 18	sampling frequency range setting
	?00	Invalid parameter
	?01	Execution failure

4.2.11. *Iclwidth* (Clamp Width)

Function: Clamp pulse width setting in analog input signal. The execution result is saved in input memory by *Reginp* command execution.

Effective inputs: ANALOG, S.ANALOG

Format: *ID* *Iclwidth* [*_ Width*]

<i>Width</i>	Clamp pulse width setting value	
	0 – 15	ANALOG of model group C
	0 – 30	ANALOG of model group A, B
	0 – 30	S.ANALOG input
	Omitted	Current setting value display

Response: *ID* *Iclwidth _ width*

<i>width</i>	Current clamp pulse width setting value	
	0 – 30	Clamp pulse width setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.12. *Icmtx* (Color Matrix)

Function: Color matrix type setting. The execution result is saved in input memory by *Reginp* command execution.

Format: *ID* *Icmtx* [*_ Cmatrix*]

<i>Cmatrix</i>	Color matrix type setting	
	0	OFF
	1	VIDEO
	2	COMPUTER
	3	USER
	Omitted	Current setting status display

Response: *ID* *Icmtx _ cmatrix*

<i>cmatrix</i>	Current color matrix type setting	
	0 – 3	Current color matrix type setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.13. Icolor (Color)

Function: Color (color depth) setting in video input signal of the input board (VC-B20KV / VC-B50KV). The execution result is saved in input memory by Reginp command execution.
 Effective inputs: COMPOSITE, Y/C

Format: *ID Icolor [_ Col]*

<i>Col</i>	Color setting value	
	-8 – 8	Color depth setting value
	Omitted	Current setting value display

Response: *ID Icolor _ col*

<i>col</i>	Current color setting value	
	-8 – 8	Current color setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.14. Icont (Contrast)

Function: Contrast setting in input signal. The execution result is saved in input memory by Reginp command execution.

Format: *ID Icont [_ Cont]*

<i>Cont</i>	Contrast setting value	
	0 – 150	Contrast setting value
	Omitted	Current setting value display

Response: *ID Icont _ cont*

<i>cont</i>	Current contrast setting value	
	0 – 150	Current contrast setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.15. Idsync (Direct Sync)

Function: Sync select setting in analog input signal. The execution result is saved in input memory by Reginp command execution.

Effective inputs: ANALOG, S.ANALOG

Format: *ID Idsync [_ Cnt]*

<i>Cnt</i>	Sync select setting		
	1	AUTO	When ANALOG input is selected.
	3	SOG	
	1	AUTO	When S.ANALOG input is selected.
	2	HD/VD	
Omitted	Current setting value display		

Response: *ID Idsync _ cnt*

<i>cnt</i>	Current Sync Select setting	
	1 – 3	Sync Select setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.16. lepllh (PLL hold end)

Function: PLL hold end position setting in analog input signal. The execution result is saved in input memory by Reginp command execution.

Effective models and inputs: ANALOG of model group A, B and S.ANALOG of all models

Format: *ID lepllh [_ End]*

<i>End</i>	PLL hold end position	
	0 – 31	PLL hold end position
	Omitted	Current setting value display

Response: *ID lepllh _ end*

<i>end</i>	Current PLL hold end position	
	0 – 31	Current PLL hold end position
	?00	Invalid parameter
	?01	Execution failure

4.2.17. Ifilter (Filter)

Function: Sharpness setting in video signal of the input board (VC-B20KV / VC-B50KV). The execution result is saved in input memory by Reginp command execution.

Effective inputs: COMPOSITE, Y/C

Format: *ID Ifilter [_ Data]*

<i>Data</i>	Sharpness setting value	
	-8 – 8	Sharpness setting value
	Omitted	Current setting value display

Response: *ID Ifilter _ data*

<i>data</i>	Current sharpness setting value	
	-8 – 8	Current sharpness setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.18. Ifine (Fine Delay)

Function: Fine sync setting in analog input signal to adjust sampling clock phase with A/D converter. The execution result is saved in input memory by Reginp command execution.

Effective inputs: ANALOG, S.ANALOG

Format: *ID Ifine [_ Phase]*

<i>Phase</i>	Sampling clock phase setting value	
	-16 – 15	When ANALOG input port is selected.
	-32 – 31	When S.ANALOG input port is selected.
	Omitted	Current setting value display

Response: *ID Ifine _ phase*

<i>phase</i>	Current sampling clock phase setting value	
	-16 – 15	When ANALOG input port is selected.
	-32 – 31	When S.ANALOG input port is selected.
	?00	Invalid parameter
	?01	Execution failure

4.2.19. Ifinv (Field Invert)

Function: Field swap setting when input signal is interlace. Use this command when the displayed image is unnatural since the odd field and even fields are inverted. The execution result is saved in input memory by Reginp command execution.

Effective inputs: S.ANALOG, S.DIGITAL

Format: *ID Ifinv [_ Mode]*

<i>Mode</i>	Field swap mode	
	0	Not to swap fields
	1	To swap fields
	Omitted	Current setting value display

Response: *ID Ifinv _ mode*

<i>mode</i>	Current field swap mode	
	0	Not to swap fields
	1	To swap fields
	?00	Invalid parameter
	?01	Execution failure

4.2.20. Ihsiz (H size)

Function: Horizontal pixels setting in input signal to adjust effective horizontal size. The execution result is saved in input memory by Reginp command execution. It executes after UP command receiving.

Effective models and inputs: ANALOG and DIGITAL of model group A, B.
S.ANALOG, S.DIGITAL, COMPOSITE, Y/C of all models

Format: *ID Ihsiz [_ Size]*

<i>Size</i>	Effective horizontal size setting value		
	640 – 1400	Effective horizontal size setting value	ANALOG, S.DIGITAL of model group A, B
	600 – 2000	Effective horizontal size setting value (Only even number can be used when composite or Y/C signal is selected.)	S.ANALOG, S.DIGITAL, COMPOSITE, Y/C
	Omitted	Current setting value display	

Response: *ID Ihsiz _ size*

<i>size</i>	Current effective horizontal size setting value		
	640 – 1400	Current effective horizontal size setting value	ANALOG, S.DIGITAL of model group A, B
	600 – 2000	Current effective horizontal size setting value (Only even number can be used when composite or Y/C signal is selected.)	S.ANALOG, S.DIGITAL, COMPOSITE, Y/C
	?00	Invalid parameter	
	?01	Execution failure	

4.2.21. lhst (H start position)

Function: Horizontal position setting in input signal to adjust effective horizontal start position. The execution result is saved in input memory by Reginp command execution. It executes after UP command receiving.

Format: *ID lhst [_ Start]*

<i>Start</i>	Effective horizontal start position setting value	
	0 – 500	ANALOG and S.DIGITAL of model group C
	0 – 1000	ANALOG and S.DIGITAL of model group A, B
	0 – 1920	S.ANALOG, S.DIGITAL, COMPOSITE, Y/C
	Omitted	Current setting value display

Response: *ID lhst _ start*

<i>start</i>	Current effective horizontal start position setting value	
	0 – 500	ANALOG and S.DIGITAL of model group C
	0 – 1000	ANALOG and S.DIGITAL of model group A, B
	0 – 1920	S.ANALOG, S.DIGITAL, COMPOSITE, Y/C
	?00	Invalid parameter
	?01	Execution failure

4.2.22. lhtotal (H total)

Function: Tracking setting in analog input signal to adjust total horizontal sampling number with A/D converter. The execution result is saved in input memory by Reginp command execution.

Effective inputs: ANALOG, S. ANALOG

Format: *ID lhtotal [_ Num]*

<i>Num</i>	Total horizontal sampling number (Only even number is available.)	
	700 – 1900	ANALOG and S.DIGITAL of model group C
	700 – 2000	ANALOG and S.DIGITAL of model group A, B
	700 – 2300	S.ANALOG (VC-B20KA)
	700 – 2640	S.ANALOG (VC-B50KA)
	Omitted	Current setting value display

Response: *ID lhtotal _ num*

<i>num</i>	Current horizontal total sampling number	
	700 – 1900	ANALOG and S.DIGITAL of model group C
	700 – 2000	ANALOG and S.DIGITAL of model group A, B
	700 – 2300	S.ANALOG (VC-B20KA)
	700 – 2640	S.ANALOG (VC-B50KA)
	?00	Invalid parameter
?01	Execution failure	

4.2.23. Iname (Input Memory Name)

Function: Comment setting in input memory. The execution result is saved in input memory by Reginp command execution.

Format: *ID Iname MemNo [_ ' Comment ']*

<i>MemNo</i>	Input memory number	
	0	Comment setting (Only when <i>comment</i> is not omitted.)
	1 – 128	Input memory number to read comment (Only when <i>Comment</i> is Omitted.)
<i>Comment</i>	Comment to set in input memory designated in <i>MemNo</i>	
	Character strings	Comment *
	Omitted	Current setting value display

* The comment should be quoted by single quotation mark (27h: “ ’ ”). Available characters are one-byte alphanumeric code, one-byte space and followings. Maximum number is 16 characters.

‘-’ (hyphen), ‘*’ (asterisk), ‘/’ (slash), ‘!’ (exclamation mark), ‘:’ (colon), ‘.’ (period), ‘?’ (question mark), ‘(,’ ‘)’ (parenthesis).

Response: *ID Iname _ memno [_ comment]*

<i>memno</i>	Input memory number	
	0	The value when <i>comment</i> is not omitted
	1 – 128	Input memory number
	?00	Invalid parameter
	?01	Execution failure
<i>comment</i>	Comment in input memory designated in <i>memno</i>	
	Character strings	Comment
	Omitted	It is omitted when <i>memno</i> is “?00” or “?01”.

4.2.24. Iscan (Scan Mode)

Function: Interlace setting to select scan mode; interlace (Static/Motion) or non-interlace, when the input signal is analog or digital of the input board (VC-B20KA / VC-B50KA). The execution result is saved in input memory by Reginp command execution.

Effective inputs: S.ANALOG, S.DIGITAL

Format: *ID Iscan [_ Mode]*

<i>Mode</i>	Scan mode (interlace/non interlace)	
	0	Non interlace
	1	Interlace (Static mode)
	2	Interlace (Motion mode)
	Omitted	Current setting status display

Response: *ID Iscan _ mode*

<i>mode</i>	Current scan mode (interlace/non interlace)	
	0	Non interlace
	1	Interlace (Static mode)
	2	Interlace (Motion mode)
	?00	Invalid parameter
	?01	Execution failure

4.2.25. Isig (Input SignalType)

Function: Signal type setting to select (RGB, YcbCr or YPbPr). This command is an exclusive command for the input board (VC-B20KA / VC-B50KA). The execution result is saved in input memory by Reginp command execution. It executes after UP command receiving.
Effective inputs: S.ANALOG, S.DIGITAL

Format: *ID Isig [_ Mode]*

<i>Mode</i>	Input signal	
	0	RGB
	1	YPbPr
	2	YcbCr(VC-B50KA)
	Omitted	Current setting status display

Response: *ID Isig _ mode*

<i>mode</i>	Current input signal selecting	
	0	Input signal selecting
	?00	Invalid parameter
	?01	Execution failure

4.2.26. Ismode (Sync Mode)

Function: Flame lock setting when input signal displaying. The execution result is saved in input memory by Reginp command execution. It executes after UP command receiving.
Effective models and inputs: ANALOG and DIGITAL of model group A, B.
S.ANALOG, S.DIGITAL, COMPOSITE, Y/C of all models

Format: *ID Ismode [_ Mode]*

<i>Mode</i>	Flame lock	
	0	OFF (Frame rate conversion mode)
	1	ON (Synchronized with input signal mode)
	Omitted	Current setting status display

Response: *ID Ismode _ mode*

<i>mode</i>	Current flame lock setting	
	0	OFF (Frame rate conversion mode)
	1	ON (Synchronized with input signal mode)
	?00	Invalid parameter
	?01	Execution failure

4.2.27. Ispllh (PLL hold start)

Function: PLL hold start position setting in analog input signal. The execution result is saved in input memory by Reginp command execution.
Effective models and inputs: ANALOG of model group A, B and S.ANALOG of all models

Format: *ID Ispllh [_ Start]*

<i>Start</i>	PLL hold start position	
	-32 – 0	PLL hold start position
	Omitted	Current setting value display

Response: *ID Ispllh _ start*

<i>start</i>	Current PLL hold start position and V noise mask end position	
	-32 – 0	Current PLL hold start position and V noise mask end position
	?00	Invalid parameter
	?01	Execution failure

4.2.28. Itint (Tint)

Function: Tint setting in NTSC video input signal of the input board (VC-B20KV / VC-B50KV). The execution result is saved in input memory by Reginp command execution.

Effective inputs: COMPOSITE, Y/C

Format: *ID Itint [_ Tint]*

<i>Tint</i>	Tint setting value	
	-8 – 8	Tint setting value
	Omitted	Current setting value display

Response: *ID Itint _ tint*

<i>tint</i>	Current Tint setting value	
	-8 – 8	Current Tint setting value
	?00	Invalid parameter
	?01	Execution failure

4.2.29. Ivcr (VCR Mode)

Function: VCR Mode setting in video input signal of the input board (VC-B20KV / VC-B50KV). The execution result is saved in input memory by Reginp command execution.

Effective inputs: COMPOSITE, Y/C

Format: *ID Ivcr [_ Mode]*

<i>Mode</i>	VCR mode	
	0	VCR mode OFF
	1	VCR mode ON
	Omitted	Current setting value display

Response: *ID Ivcr _ mode*

<i>mode</i>	Current VCR mode	
	0	VCR mode OFF
	1	VCR mode ON
	?00	Invalid parameter
	?01	Execution failure

4.2.30. Ivsig (Video signal)

Function: Video signal format setting. The execution result is saved in input memory by Reginp command execution.

Effective inputs: COMPOSITE, Y/C

Format: *ID Ivsig [_ Sel]*

<i>Sel</i>	Video input signal	
	0	AUTO
	1	NTSC
	2	PAL
	3	SECAM
	4	PAL-M
	5	PAL-N
	6	443NTSC
	7	PAL-60
Omitted	Current setting status display	

Response: *ID Ivsig _ sel*

<i>sel</i>	Current selected video signal	
	0 – 7	selected video signal
	?00	Invalid parameter
	?01	Execution failure

4.2.31. Ivsize (V size)

Function: Vertical lines setting in input signal. The execution result is saved in input memory by Reginp command execution. It executes after UP command receiving. The values of Ovcrp, Ovcsz, Ovst and Ovsize are re-calculated by this command.

Effective models and inputs: ANALOG and DIGITAL of model group A, B
S.ANALOG, S.DIGITAL, COMPOSITE, Y/C of all models

Format: *ID Ivsize [_ Size]*

<i>Size</i>	Effective vertical size setting value		
	350 – 1050	Effective vertical size setting value	ANALOG and DIGITAL of model group A, B
	8 – 1300	Effective vertical size setting value	S.ANALOG, S.DIGITAL COMPOSITE, Y/C
	Omitted	Current setting value display	

Response: *ID Ivsize _ size*

<i>size</i>	Current effective vertical size setting value		
	350 – 1050	Effective vertical size setting value	ANALOG and DIGITAL of model group A, B
	8 – 1300	Effective vertical size setting value	S.ANALOG, S.DIGITAL COMPOSITE, Y/C
	?00	Invalid parameter	
	?01	Execution failure	

4.2.32. Ivst (V start position)

Function: Vertical start position setting in input signal. The execution result is saved in input memory by Reginp command execution. It executes after UP command receiving. The sum of Ivst and Ivsize setting values may be automatically changed not to over the measured line number of the input signal.

Format: *ID Ivst [_ Start]*

<i>Start</i>	Effective vertical start position setting value		
	0 – 50	ANALOG and DIGITAL of model group C	
	0 – 500	ANALOG and DIGITAL of model group A, B	
	0 – 1200	S.ANALOG, S.DIGITAL, COMPOSITE, Y/C	
	Omitted	Current setting value display	

Response: *ID Ivst _ start*

<i>start</i>	Current effective vertical start position setting value		
	0 – 50	ANALOG and DIGITAL of model group C	
	0 – 500	ANALOG and DIGITAL of model group A, B	
	0 – 1200	S.ANALOG, S.DIGITAL, COMPOSITE, Y/C	
	?00	Invalid parameter	
?01	Execution failure		

4.2.33. Ohcrp (H crop position)

Function: Horizontal crop start position setting from frame memory of input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV). The execution result is saved in display memory by Regdisp command execution. It executes after UP command receiving.
 Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Ohcrp [_ Pos]*

<i>Pos</i>	Horizontal crop start position setting value from frame memory	
	0 – 1919	Horizontal crop start position
	Omitted	Current setting value display

Response: *ID Ohcrp _ pos*

<i>pos</i>	Current horizontal crop start position setting value from frame memory	
	0 – 1919	Current horizontal crop start position
	?00	Invalid parameter
	?01	Execution failure

4.2.34. Ohcsize (H crop size)

Function: Horizontal crop size setting from frame memory of input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV). The execution result is saved in display memory by Regdisp command execution. It executes after UP command receiving.
 Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Ohcsize [_ Size]*

<i>Size</i>	Horizontal crop size value from frame memory	
	8 – 1920	Horizontal crop size
	Omitted	Current setting value display

Response: *ID Ohcsize _ size*

<i>size</i>	Current horizontal crop size value from frame memory	
	8 – 1920	Current horizontal crop size
	?00	Invalid parameter
	?01	Execution failure

4.2.35. Ohsize (H size)

Function: Horizontal display size in input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV) setting on screen. The execution result is saved in display memory by Regdisp command execution. It executes after UP command receiving.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID* Ohsize [*_ Size*]

<i>Size</i>	Horizontal display size setting value on screen		
1 – 1072	Horizontal display size	Model group C	
2 – 1072	Horizontal display size	VC-B50KA / VC-B50KV	
1 – 1448	Horizontal display size	Model group B SXGA+ (1400 x 1050)mode	
1 – 1328	Horizontal display size	Model group B SXGA (1280 x 1024)mode	
Omitted	Current setting value display		

Response: *ID* Ohsize *_ size*

<i>size</i>	Current horizontal display size setting value on screen		
1 – 1072	Horizontal display size	Model group C	
2 – 1072	Horizontal display size	VC-B50KA / VC-B50KV	
1 – 1448	Horizontal display size	Model group B SXGA+ (1400 x 1050)mode	
1 – 1328	Horizontal display size	Model group B SXGA (1280 x 1024)mode	
?00	Invalid parameter		
?01	Execution failure		

4.2.36. Ohst (H start)

Function: Horizontal display position in input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV) setting on screen. The execution result is saved in display memory by Regdisp command execution. It executes after UP command receiving.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID* Ohst [*_ Pos*]

<i>Pos</i>	Horizontal display position setting value on screen		
-24 – 1023	Horizontal display position	Model group A, C	
-24 – 1399	Horizontal display position	Model group B SXGA+ (1400 x 1050)mode	
-24 – 1279	Horizontal display position	Model group B SXGA (1280 x 1024)mode	
Omitted	Current setting value display		

Response: *ID* Ohst *_ pos*

<i>pos</i>	Current horizontal display position setting value on screen		
-24 – 1023	Horizontal display position	Model group A, C	
-24 – 1399	Horizontal display position	Model group B SXGA+ (1400 x 1050)mode	
-24 – 1279	Horizontal display position	Model group B SXGA (1280 x 1024)mode	
?00	Invalid parameter		
?01	Execution failure		

4.2.37. Oscmode (Display Screen Mode)

Function: Screen mode in input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV) setting. The execution result is saved in display memory by Regdisp command execution. It executes after UP command receiving.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID* Oscmode [*_ Mode*]

<i>Mode</i>	Screen mode	
	0	NORMAL
	1	TRIMMING
	2	FULL
	Omitted	Current setting status display

Response: *ID* Oscmode *_ mode*

<i>mode</i>	Current screen mode	
	0	NORMAL
	1	TRIMMING
	2	FULL
	?00	Invalid parameter
	?01	Execution failure

4.2.38. Out (Digital Out)

Function: Digital out setting to select the input memory number to be output from the digital output terminal of the input board (VC-B20KA / VC-B50KA). It is invalid when input memory of XL20U main unit is selected as designate input memory. The execution result is saved in display memory by Regdisp command execution.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID* Out [*_ MemNo*]

<i>MemNo</i>	Digital out setting	
	0	OFF
	1 – 128	Input memory number
	129	SCREEN
	Omitted	Current setting value display

Response: *ID* Out *_ memno*

<i>memNo</i>	Current digital out setting	
	0	OFF
	1 – 128	Input memory number
	129	SCREEN
	?00	Invalid parameter
	?01	Execution failure

4.2.39. Ovcrp (V crop position)

Function: Vertical crop start position setting from frame memory of input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV). The execution result is saved in display memory by Regdisp command execution. It executes after UP command receiving.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Ovcrp [_ Pos]*

<i>Pos</i>	Vertical crop start position setting value from frame memory	
	0 – 1199	Vertical crop start position
	Omitted	Current setting value display

Response: *ID Ovcrp _ pos*

<i>pos</i>	Current vertical crop start position setting value from frame memory	
	0 – 1199	Current vertical crop start position
	?00	Invalid parameter
	?01	Execution failure

4.2.40. Ovcsz (V crop size)

Function: Vertical crop size position setting from frame memory of input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV). The execution result is saved in display memory by Regdisp command execution. It executes after UP command receiving.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID Ovcsz [_ Size]*

<i>Size</i>	Vertical crop size setting value from frame memory	
	1 – 1200	Vertical crop size
	Omitted	Current setting value display

Response: *ID Ovcsz _ size*

<i>size</i>	Current vertical crop size setting value from frame memory	
	1 – 1200	Current vertical crop size
	?00	Invalid parameter
	?01	Execution failure

4.2.41. Ovsiz (V size)

Function: Vertical display size in input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV) setting on screen. The execution result is saved in display memory by Regdisp command execution. It executes after UP command receiving.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID* Ovsiz [*_ Size*]

<i>Size</i>	Vertical display size setting value on screen		
	1 – 802	Vertical display size	Model group C
	2 – 802	Vertical display size	VC-B50KA / VC-B50KV
	1 – 1086	Vertical display size	Model group B SXGA+ (1400 x 1050)mode
	1 – 1060	Vertical display size	Model group B SXGA (1280 x 1024)mode
Omitted	Current setting value display		

Response: *ID* Ovsiz *_ size*

<i>size</i>	Current vertical display size setting value on screen		
	1 – 802	Vertical display size	Model group C
	2 – 802	Vertical display size	VC-B50KA / VC-B50KV
	1 – 1086	Vertical display size	Model group B SXGA+ (1400 x 1050)mode
	1 – 1060	Vertical display size	Model group B SXGA (1280 x 1024)mode
	?00	Invalid parameter	
?01	Execution failure		

4.2.42. Ovst (V start)

Function: Vertical display position in input signal of the input boards (VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV) setting on screen. The execution result is saved in display memory by Regdisp command execution. It executes after UP command receiving.

Effective inputs: S.ANALOG, S.DIGITAL, COMPOSITE, Y/C

Format: *ID* Ovst [*_ Pos*]

<i>Pos</i>	Vertical display position setting value on screen		
	-17 – 767	Vertical display position	Model group A, C
	-18 – 1049	Vertical display position	Model group B SXGA+ (1400 x 1050)mode
	-18 – 1023	Vertical display position	Models group B SXGA (1280 x 1024)mode
	Omitted	Current setting value display	

Response: *ID* Ovst *_ pos*

<i>pos</i>	Current vertical display position setting value on screen		
	-17 – 767	Vertical display position	Model group A, C
	-18 – 1049	Vertical display position	Model group B SXGA+ (1400 x 1050)mode
	-18 – 1023	Vertical display position	Models group B SXGA (1280 x 1024)mode
	?00	Invalid parameter	
	?01	Execution failure	

4.2.43. Regdisp (Registration of the Display memory)

Function: Display memory registration. It may take more than 700 msec till the display returns the result string after receiving a command. This command is invalid when input memory is not registered.

Format: *ID Regdisp _ [MemNo _ OverWrt]*

<i>MemNo</i>	Display memory number	
	1 – 256	Display memory number
	Omitted	Current display memory number display
<i>OverWrt</i>	Overwriting/not overwriting setting (when the display memory number that is designated in <i>MemNo</i> has already been registered.)	
	0	Not overwriting
	1	Overwriting
	Omitted	Current display memory number display

Response: *ID Regdisp _ memno [_ overwrt]*

<i>memno</i>	Current display memory number	
	1 – 256	Current display memory number
	?00	Invalid parameter
	?01	Execution failure (already registered)
<i>overwrt</i>	<i>OverWrt</i> echo back	
	0 – 1	<i>OverWrt</i> value displaying when <i>MemNo</i> and <i>OverWrt</i> are not omitted.
	Omitted	It is omitted when <i>memno</i> is “?00” or “?01” or <i>MemNo</i> and <i>OverWrt</i> are omitted.

4.2.44. Reginp (Registration of the Input Memory)

Function: Input memory registration. It may take more than 700 msec till the display returns the result string after receiving a command.

Format: *ID Reginp _ [MemNo _ OverWrt]*

<i>MemNo</i>	Input memory number	
	1 – 128	Input memory number
	Omitted	Current input memory number display
<i>OverWrt</i>	Overwriting/not overwriting setting (when the input memory number that is designated in <i>MemNo</i> has already been registered.)	
	0	Not overwriting
	1	Overwriting
	Omitted	Current input memory number display

Response: *ID Reginp _ memno [_ overwrt]*

<i>memno</i>	Current input memory number	
	1 – 128	Input memory number
	?00	Invalid parameter
	?01	Execution failure
<i>overwrt</i>	<i>OverWrt</i> echo back	
	0 – 1	<i>OverWrt</i> value displaying when <i>MemNo</i> and <i>OverWrt</i> are not omitted.
	Omitted	It is omitted when <i>memno</i> is “?00” or “?01” or <i>MemNo</i> and <i>OverWrt</i> are omitted.

4.2.45. memscan (Memory Scan)

Function: To scan adequate input signal setting among registered input memory list and the default memory, and then call and display the matched memory. If it doesn't match, it calculates the setting values from measuring result of input signal and is ready for displaying them. It may take more than 700 msec till the display returns the result string after receiving a command.

Format: *ID memscan*

Response: *ID memscan _ memno*

<i>memno</i>	Result status	
0	No matched memory	
1 – 128	Called input memory number from the execution result	
129 – 255	Called memory number in the default table from the execution result	
?00	Invalid parameter	
?01	Execution failure	

4.2.46. resolution (Resolution Select)

Function: Resolution setting of the input signal.

Effective models and inputs: ANALOG and DIGITAL of model group C

Format: *ID resolution _ Mode*

<i>Mode</i>	Resolution setting	
0	640X480,60Hz	
1	800X600,56Hz	
2	800X600,60Hz	
3	1024X768,60Hz	
4	1280X960,60Hz	
5	1280X1024,60Hz	

Response: *ID resolution _ mode*

<i>mode</i>	Resolution setting	
0	640X480,60Hz	
1	800X600,56Hz	
2	800X600,60Hz	
3	1024X768,60Hz	
4	1280X960,60Hz	
5	1280X1024,60Hz	
?00	Invalid parameter	
?01	Execution failure	

5. Control example

“Fig. 5.1 system connection” describes an example of multi-screen controlling and “Table 5.1 memory contents” shows the contents of registered memories. Each unit has installed the input board (VC-B20KA / VC-B50KA).

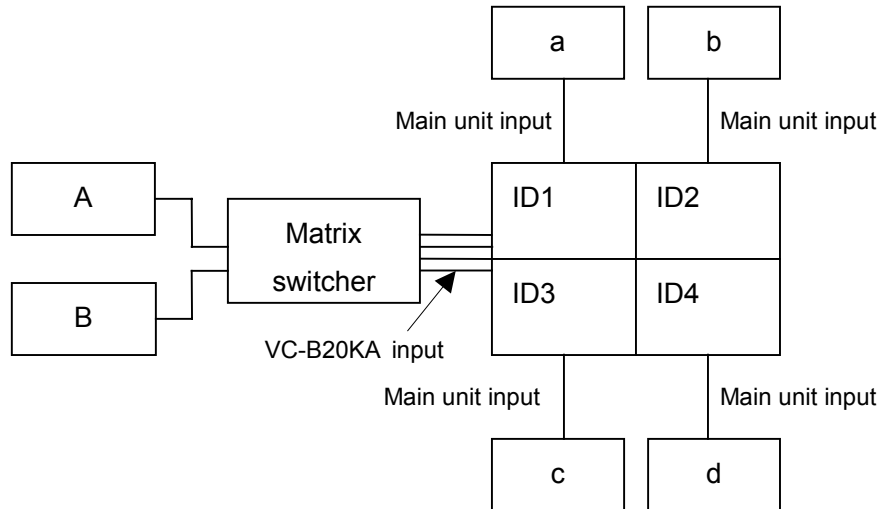


Fig. 5.1 system connection

Memory	Memory number	Description
Input memory	1	Input A (VC-B20KA input)
	2	Input A (VC-B20KA input)
	3	Input a, input b, input c, input d (Main unit input)
Display memory	1	Input A expansion setting for 4 screens
	2	Input B expansion setting for 4 screens

Table 5.1 memory contents

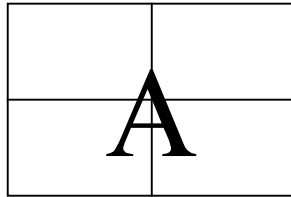
5.1. Start-up process example

Sending strings	Response strings	Description
00vP 1	00vP 1	Turning on direction
01vP	00vP 2	Waiting for start-up process finishing by vP command (only in ID1 display)
01vP	00vP 2	
⋮	⋮	
01vP	00vP 2	
01vP	00vP 1	Confirmation of start-up process finishing in ID1
02vP	02vP 1	Confirmation of start-up process finishing in the rest of displays
03vP	03vP 1	
04vP	04vP 1	

5.2. VC-B20KA / VC-B50KA input signal display

5.2.1. Display memory calling example 1

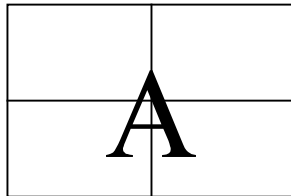
Sending strings	Response strings	Description
00Pmute 1	00Pmute 1	Picture mute direction
00Calldisp 1	00Calldisp 1	Direction of display memory 1 calling
00UP	00UP	Execution of Pmute and Calldisp commands
(Wait) (External switcher switching etc.)		Waiting a few seconds (to prevent from picture noise when switching)
00Pmute 0	00Pmute 0	Direction of picture mute cancel
00UP	00UP	Execution of Pmute command



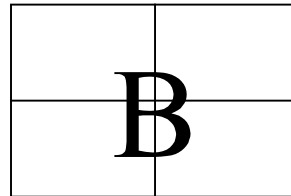
Displaying after execution

5.2.2. Display memory calling example 2

Sending strings	Response strings	Description
00Pmute 1	00Pmute 1	Picture mute direction
00Calldisp 2	00Calldisp 2	Direction of display memory 2 calling
00UP	00UP	Execution of Pmute and Calldisp commands
(Wait) (External switcher switching etc.)		Waiting a few seconds (to prevent from picture noise when switching)
00Pmute 0	00Pmute 0	Direction of picture mute cancel
00UP	00UP	Execution of Pmute command



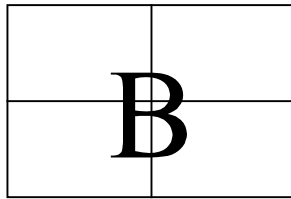
Before execution



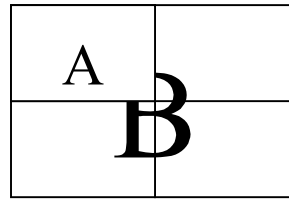
Displaying after execution

5.2.3. Original size display in ID1

Sending strings	Response strings	Description
01Pmute 1	01Pmute 1	Picture mute direction to ID1
01Callinp 1	01Callinp 1	Direction of input memory 1 calling
01Ohmpos 1 1	01Ohmpos 1 1	Setting of horizontal expansion rate of ID1 to 1/1
01Ovmpos 1 1	01Ovmpos 1 1	Setting of vertical expansion rate of ID1 to 1/1
01UP	01UP	Execution of Pmute, Callinp, Ohmpos and Ovmpos commands
(Wait) (External switcher switching etc.)		Waiting a few seconds (to prevent from picture noise when switching)
01Pmute 0	01Pmute 0	Direction of picture mute cancel
01UP	01UP	Execution of Pmute command



Before execution

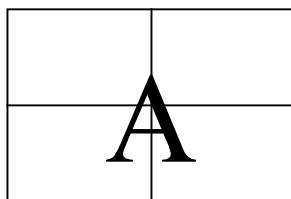


Displaying after execution

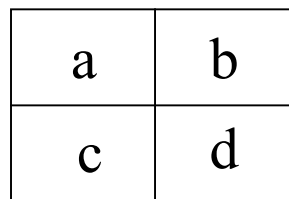
5.3. Main unit input signal display example

(different images in original sizes without display memories)

Sending strings	Response strings	Description
00Pmute 1	00Pmute 1	Picture mute direction toward all displays
00Callinp 3	00Callinp 3	Direction of input memory 3 calling. Input port is main unit.
00UP	00UP	Execution of Pmute and Calldisp commands
(Wait) (External switcher switching etc.)		Waiting a few seconds (to prevent from picture noise when switching)
00Pmute 0	00Pmute 0	Direction of picture mute cancel
00UP	00UP	Execution of Pmute command



Before execution



Displaying after execution

6. Start up and shut down

6.1. Start-up process

When turning on (vP) command is published, it starts start-up process according to the contents saved in the last memory. The priority is the order of the display memory, the input memory and input port.

If the memory number is set by start memory (Startmem command), set memory number is called at start-up processing.

If auto power setting (Sautopow command) is set auto power on, the unit starts start-up process automatically.

6.2. Shut-down process

When the unit shut down, following contents are memorized in the last memory.

Memorized last memory item	
Last power	Last power control state
Input port number	Last selected input port number
Input memory number	Last selected input memory number
Display memory number	Last selected display memory number

7. Remote controllable item list

7.1. Service menu adjusting item

Remote controllable item	command	Function	Memory	Save command	Update support	*Kind of command	pages		
TARGET COLOR	CSC 1 CSC 2 CSC OFF	Select CSC table	System	save	-	Common	31		
								R→R	
	CSC	SetCSC	Setup of CSC	System	save	-	Common	32	
									R→G
									R→B
									G→R
									G→G
									G→B
									B→R
									B→G
B→B									
GRADATION	PSetTColor	Set Target Color	System	save	-	Common	22		
								SENSOR	
	SALC PALC	Auto luminance control Set Initial Sensor Data	System	save	-	Common	Common	22	
									WHITE/RED/GREEN/BLUE /OFF
									TOP
									BOTTOM
									LEFT
									RIGHT
									TOP/LEFT
									TOP/LIGHT
BOTTOM/LEFT									
BOTTOM/RIGHT									
MECHALIGNMENT	SetGrad	Set Gradation	System	save	-	Common	33		
								ZOOM	
	Pmech	Mech Alignment	System	save	-	Common	Common	19	
									H-KEYSTONE
									V-KEYSTONE
									TILT
									H-POSITION
									V-POSITION
									CALIBRATION
									CHANGE MODE
	PLSearch	Position calibration	System	Save	-	Common	21		
	SCmode	Change mode	System	Save	-	Common	29		
	SHotEx	Hot exchange	System	Save	-	Common	35		

Remote controllable item	command	Function	Memory	Save command	Update support	*Kind of command	pages
BLACK LEVEL	Sblack	Black level	System	save	—	Common	27
	SeiW	Select white balance table	System	save	—	Common	31
	SetW	Setup of White balance	System	save	—	Common	34
COLOR MATRIX	Scmtxset	Color Matrix	System	save	—	Common	29
	SAwhite	Auto white adjustment of all memories.	System	save	—	Common	26
	SAgain	Gain adjustment of all memories	System	save	—	Common	24
	SetFilter	Filter Warning Setting	System	save	—	Common	32
	Sdirection	Direction	System	save	—	Common	30
	SJpower	Lamp Power	System	save	—	Common	37
	Slmode	Lamp mode	System	save	—	Common	37
TERMINATE.	SAnaTerm	Analog Terminate	System	save	—	Common	25
ADV.COLOR	SAColor	ADV.Color	System	save	—	Common	23
ADV.DARK	SADark	ADV.Dark	System	save	—	Common	24
GAMMA	Sgamma	Gamma table select	System	save	—	Common	35
3D Y/C	S3DYC	3D Y/C control	System	save	—	Input board	22
DITHER	Sdither	Dither ON/OFF	System	save	—	Common	31
START MEMORY	Startmem	Start Memory	System	save	—	Common	38
OVERLAP	Sdisp	Display mode (Overlap ON/OFF)	System	save	—	Input board	30
	Shpos	H Display position offset	System	save	—	Input board	36
	Svpos	V Display position offset	System	save	—	Input board	38
	Shsize	H Display size offset	System	save	—	Input board	36
	Svsize	V Display size offset	System	save	—	Input board	38

Remote controllable item	command	Function	Memory	Save command	Update support	*Kind of command	pages
SYSTEM SYNC	Syssync	System sync (50Hz/60Hz)	System	save	—	Common	39
IMAGE FLIP	Sflip	Image flip	System	save	—	Common	35
INDICATION	SautoDisp	Indicator setting	System	save	—	Common	26
WHITE BOOST	Sblank	Blanking	System	save	—	Common	28
AUTO POWER ON	Sautopow	Auto Power setting	System	save	—	Common	27
BLOWOUT	Slampout	Lamp out mode	System	Save	—	Common	36
CABLE LENGTH	Scablelength	Cable length	System	Save	—	Common	28
RESOLUTION	Sresol	Resolution	System	Save	—	Common	37
LAMP TIMER RESET	PLampTRreset	Lamp timer reset	—	—	—	Common	21
FILTER RESET	Sfilter	Filter timer reset	—	—	—	Common	34
—	save	Video/System Memory save	—	—	—	Common	40

7.2. VC-B20KA / VC-B20KV / VC-B50KA / VC-B50KV input adjusting item

7.2.1. MENU1

Remote controllable item	command	Function	Memory	Save command	Update support	*Kind of command	pages
MENU1 + NORMAL Key	memscan	Memory Scan	Input	—	—	Common	61
H.POSITION	lhst	Input signal H start position	Input	Reginp	UP	Common	50
V.POSITION	lvst	Input signal V start position	Input	Reginp	UP	Common	54
H.SIZE	lhsize	Input signal H size	Input	Reginp	UP	Common	49
V.SIZE	lvsize	Input signal V start position	Input	Reginp	UP	Common	54
FRAME CONTROL	lsmode	Sync mode	Input	Reginp	UP	Common	52
INTERLACE F-INVERT	lscan	Scan mode	Input	Reginp	—	Input board	51
	lfinv	Field invert	Input	Reginp	—	Input board	49
resolution	resolution	Resolution Select	Input	—	—	Main unit	61
lvsig	lvsig	Video signal	Input	Reginp	—	Input board	53
BRIGHTNESS	lbrt	Brightness	Input	Reginp	—	Common	44
CONTRAST	lcont	Contrast	Input	Reginp	—	Common	47
COLOR MATRIX	lcmtx	Color Matrix	Input	Reginp	—	Common	46
APERTURE	laperture	Aperture	Input	Reginp	—	Common	43

Remote controllable item	command	Function	Memory	Save command	Update support	*Kind of command	pages
ASPECT-RATIO	laspect	Aspect Ratio	Input	Reginp	—	Input board	43
SCALING FILTER	IPconv	Pixel Conversion	Input	Reginp	—	Common	43
H.TOTAL	Ihtotal	H total (RGB analog)	Input	Reginp	—	Common	50
FINE	Ifine	AD fine delay (RGB analog)	Input	Reginp	—	Common	48
CLAMP START	Iclpos	Clamp position (RGB analog)	Input	Reginp	—	Common	44
CLAMP WHIDTH	Iclwidth	Width of clamp pulse (RGB analog)	Input	Reginp	—	Common	46
MASK START	Ispilh	PLL hold start (RGB analog)	Input	Reginp	—	Common	52
MASK END	Iepilh	PLL hold end (RGB analog)	Input	Reginp	—	Common	48
SYNC SELECT	Idsync	Direct sync ON/OFF (RGB analog)	Input	Reginp	—	Common	47
CLOCK RENGE	Iclrng	Clock range (RGB analog)	Input	Reginp	—	Common	45
	Aswhite	Auto white (RGB analog)	Input	Reginp	—	Common	42
	Asgain	Gain adjustment (RGB analog)	Input	Reginp	—	Common	41
SIGNAL-TYPE	Isig	Signal Type	Input	Reginp	UP	Input board	52
COLOR	Icolor	Color (Video)	Input	Reginp	—	Input board	47
TINT	Itint	Tint (NTSC Video)	Input	Reginp	—	Input board	53
SHARPNESS	Ifilter	Sharpness filter(Video)	Input	Reginp	—	Input board	48
VCR MODE	Ivcr	VCR MODE	Input	Reginp	—	Input board	53
—	Iname	Input memory Name	Input	Reginp	—	Common	51
—	Reginp	Registration of the Input Memory	Input	—	—	Common	60

7.2.2. MENU2

Remote controllable item	command	Function	Memory	Save command	Update support	*Kind of command	pages
H DISPLAY POS	Ohmpos	H multi position	Display	Regdisp	UP	Input board	13
V DISPLAY POS	Ovmpos	V multi position	Display	Regdisp	UP	Input board	14
	Ohcrp	Input signal H crop position	Display	Regdisp	UP	Input board	55
	Ovcrp	Input signal V crop position	Display	Regdisp	UP	Input board	58
	Ohcsize	Input signal H crop size	Display	Regdisp	UP	Input board	55
	Ovcsize	Input signal V crop size	Display	Regdisp	UP	Input board	58

Remote controllable item	command	Function	Memory	Save command	Update support	*Kind of command	pages
DIGITAL OUT	H position	Display H start	Display	Regdisp	UP	Input board	56
	V position	Display V start	Display	Regdisp	UP	Input board	59
	H SIZE	Display H size	Display	Regdisp	UP	Input board	56
	V SIZE	Display V size	Display	Regdisp	UP	Input board	59
SCREEN MODE	Out	Digital Out	Display	Regdisp	—	Input board	57
	Oscmode	Screen Mode	Display	Regdisp	UP	Input board	57
-	Regdisp	Registration of the Display memory	Display	—	—	Common	60

7.3. Other remote controllable item list

Remote controllable item	Command	Function	Memory	Save command	Update support	*Kind of command	pages
POWER Key	Callinp	Input Memory Call	Input	—	UP	Common	13
	Delinp	Delete Input memory	Input	—	—	Common	42
	Calldisp	Display Memory Call	Display	—	UP	Common	12
	Deldisp	Delete display memory	Display	—	—	Common	42
INPUT Key	vP	Power ON/OFF	—	—	—	Common	11
TEST Key	Pinp	Input select	—	—	—	Common	18
R G B Key	Test	Test signal	—	—	—	Common	39
	Tstmute	Test Mute	—	—	—	Common	40

7.4. Controll command item list

Command	Function	Memory	Save command	Update support	*Kind of command	pages
UP	Update	—	—	—	Common	12
Pmute	Picture Mute	—	—	UP	Common	12
System	System Information (read only)	—	—	—	Common	16
ST	Status(read only)	—	—	—	Common	15
SALCth	Threshold for auto luminance control	System	save	—	Common	23
Pmechst	Mech Adjuster Status(read only)	—	—	—	Common	20
PLampChange	Lamp Change	—	—	—	Common	18

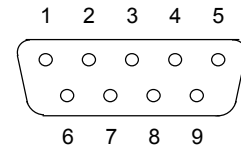
*Kind of command Common: It can be used regardless of which input port is selected.
Main unit: It can be used when the input port of the main unit is selected.
Input board It can be used when the input port of the input board is selected.

8. Terminal functions

8.1. RS232C terminal

- Connector: D-sub 9 pins male
- Cable: Commercially available cross cables can be used to connect with external controller.
- Pin assignment:

Pin No.	I/ O	Signal
1	–	N.C.
2	Input	RD(Receive Data)
3	Output	SD(Send Data)
4	Output	ER(Equipment Ready)
5	–	SG(Signal Ground)
6	Input	DR(Data Set Ready)
7	–	N.C.
8	–	N.C.
9	–	N.C.

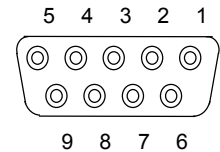


RS232C serial port
pin assignment

8.2. Control terminal

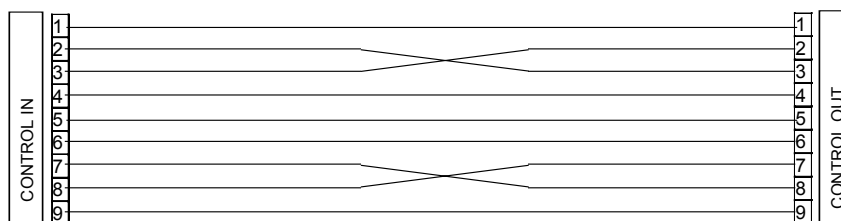
- Connector: D-sub 9 pins female
- Cable: Supplied cube connection control cable.
- Pin assignment:

Pin No.	I/O		Signal	
	IN	OUT	IN	OUT
1	INPUT	OUTPUT	EXVIN	EXVOUT
2	OUTPUT	OUTPUT	TXDS2	TXDM2
3	INPUT	INPUT	RXDS2	RXDM2
4	OUTPUT	INPUT	GND	GND
5	I/O	I/O	UP/BUSY	UP/BUSY
6	INPUT	OUTPUT	RCIN	RCOUT
7	OUTPUT	OUTPUT	TXDS2	TXDM2
8	INPUT	INPUT	RXDS2	RXDM2
9	OUTPUT	NC	DE1	NC



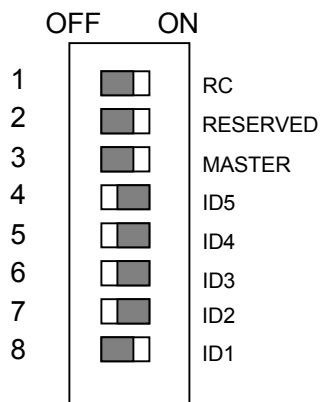
Control IN/OUT port
pin assignment

- Control cable wiring



8.3. Dipswitch

No.	Name	Function	Initial Setup
1	RC	Enabling remote control (ON: enabled, OFF: Disabled)	ON
2	RESERVED	Normally ON.	ON
3	MASTER	MASTER/SLAVE setting(ON: MASTER, OFF: SLAVE)	ON
4	ID5	Designating set ID number (1 to 32) (ON: 1, OFF: 0) ID No. = 1x (ID1) +2x (ID2) +4x (ID3) +8x (ID4) +16x (ID5) Example: ID No.=1: ID1= ON,ID2,ID3,ID4 and ID5= OFF IDNo.=32: ID1,ID2,ID3,ID4 and ID5= OFF	OFF
5	ID4		OFF
6	ID3		OFF
7	ID2		OFF
8	ID1		ON



9. Revision archive

Description	Revision date
Issue first edition (REV 1.0)	July 01, 2003
Add the models, VS-XL20U / VS-50XLW20U / VS-XLW20U / VS-67XL20U Chapter 3.1.8. Add ST Command Chapter 3.1.9. Add the description of the lamp changer model to System command Chapter 3.1.11. Add PLampChange command Chapter 4.1.15. Add OSD warning indication to SautoDisp command Chapter 4.1.20. Add SCmode command Chapter 4.1.38. Add Slmode command Chapter 4.2.29. Add Ivcr command Add the Chapter 8, Terminal functions	September 22, 2003 (Rev 1.1)
Add the model, VS-50XLF20U. In chapter 2.3, the range of Unit ID was from 0 to 32. In chapter 3.1.9, delete the response parameter <i>info2</i> in the case of "Para=18,19". Chapter 4.1.2. Add Pmech command. Chapter 4.1.3. Add Pmechst command. Chapter 4.1.28. Add SetFilter command. Chapter 4.1.31. Add Sfilter command. In chapter 4.2.20, the range of H.SIZE was "640 – 1920". In chapter 4.2.31, the range of V.SIZE was "8 – 1200". In chapter 8.3, delete "When writing the firmware, set OFF" in the Function of dipswitch No.2.	January 14, 2004 (Rev 1.2)
Add PH series models Chapter 4.1.19. Add Scablelength command. Chapter 4.1.22 . Add Sdirection command. Chapter 4.1.34 . Add SHotEx command Chapter 4.1.40 . Add Sresol command	September 15,2005 (REV 2.0)
Add XL50 series models Add Chapter 1 (Product list) In chapter 3.1.8. Correct wrong description (Old: 00:Stand-by state (BLOWOUT) 01:Normal state). In chapter 4.1.14. Add description "When <i>Mode</i> of Isig command is not set to 0, this command is not available." In chapter 4.2.2. Add description " When <i>Mode</i> of Isig command is not set to 0, this command is not available." In chapter 4.2.34, the range of horizontal crop size was "1 – 1920".	November 15, 2005 (REV 4.0)