



Portable signal generator programming software

SP-8848

Instruction Manual

Ver.2.6



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2007.2

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ASTRODESIGN,Inc

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Forew Word

Thank you for purchasing the programmable video signal generator.

This manual provides details on how to use the SP-8848 software program to edit, create, send and receive data used for the programmable video signal generator (hereafter abbreviated to "VG"). (The figures and diagrams referred to in this manual show what applies when the VG-848 has been connected, and there may be differences when connections are made with another VG. Refer to the help provided for each editing program. The basic operating methods are the same no matter which model VG has been connected.)

This manual describes how to use the SP-8848. For details on specific setting items, settings or other such aspects, refer to the SP-8848 help or the instruction manual of the VG concerned.

After reading through this manual, keep it in a safe place for future reference.

SAFETY PRECAUTIONS

WARNING

- Concerning foreign matter

Do not spill liquids onto the product or drop inflammable objects or metal parts onto it. Use under these conditions may cause a fire, electrical shock or malfunctioning.

CAUTION

- Concerning the installation and operating locations

Install this product in a stable place.

Before installing the product, be absolutely sure to turn off the power of the computer and unplug its power cable.

- Concerning impact

This is a precision piece of equipment and, as such, subjecting it to impact may cause malfunctioning. Take special care when moving the product.

1

About the SP-8848

1.1. General

The SP-8848 is an application software program for operating the VG-848, and it is designed to run in a Windows environment. It enables the statuses of the VG-848 to be captured and its settings to be changed. It can also create data and execute the data which has been created.

All operations are conducted at the personal computer, and the data created can be stored in the computer as files.

1.2. Features

1.2.1. Software program compatible with Windows

This program enables data to be edited and executed in a Windows environment.

1.2.2. Simple data management functions with a high degree of freedom

Timing data and pattern data can be organized separately in their own files. Data management can easily be exercised by such features as the list display, sort function and naming function.

1.3. Software installation

This section describes how to install the files which are used for operating the SP-8848 in a Windows environment. These instructions apply to the installation which involves the use of the following disk.

SP-8488 installation CD, Windows edition

1.3.1. Installing the SP-8848

(1) Place the SP-8848 installation CD in the CD drive, and in Windows select [Start] → [Settings] → [Control Panel] → [Add/Remove Programs] → [Install]. The installer now starts up, and the setup begins.

(2) The "Welcome" dialog screen is the first to appear. When the [Next] button is clicked, the setup advances to the next step; conversely, when the [Back] button is clicked, it returns to the previous step. The setup is aborted by pressing the [Cancel] button.

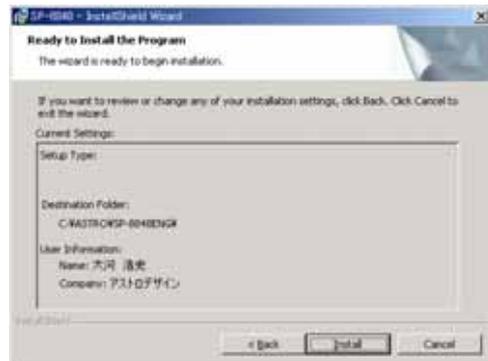
Click the [Next] button.



(3) On the "Select installation destination" dialog screen, select the directory into which the SP-8848 is to be copied. As the default, the "ASTRO¥SP-8848" directory is created in the C: drive root directory, and the files are copied into it. The copy destination directory can be changed to any directory specified by the user. Click the [Browse] button and set the directory.



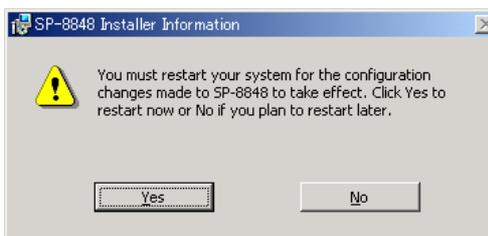
(4) Select the [Install] button. The file installation dialog screen now appears, and installation begins.



(5) The setup is now completed. Press the [Finish] button.



(6) The user is now prompted to restart the PC. Be absolutely sure to select [Yes].



(7) The installation is now completed. In Windows, select [Start] → [Programs] → [SP-8848] → [Guide Help] and read through the guide help. Then select [Start] → [Programs] → [SP-8848] → [VGBase] to start up [VGBase].

1.3.2. Installing the USB driver

- (1) When the system is connected with the VG for the first time, it recognizes the VG, and the [Add New Hardware Wizard] dialog box appears. Select the [Next] button.
- (2) Select [Search for optimal driver for device in use (recommended)] as the search method, and select the [Next] button.
- (3) Place the SP-8848 installation CD in the CD drive, check [Specify search location], specify CD drive and select the [Next] button.
- (4) Check that "VgUsb.sys" has been found, and then select the [Next] button. Installation now begins.
- (5) For the remaining steps, follow the on-screen directions.

***When installing the driver in Windows XP, the following dialog box appears referring to the fact that Microsoft has not officially certified its use. Press the [Continue] button.**



1.3.3. Uninstallation method

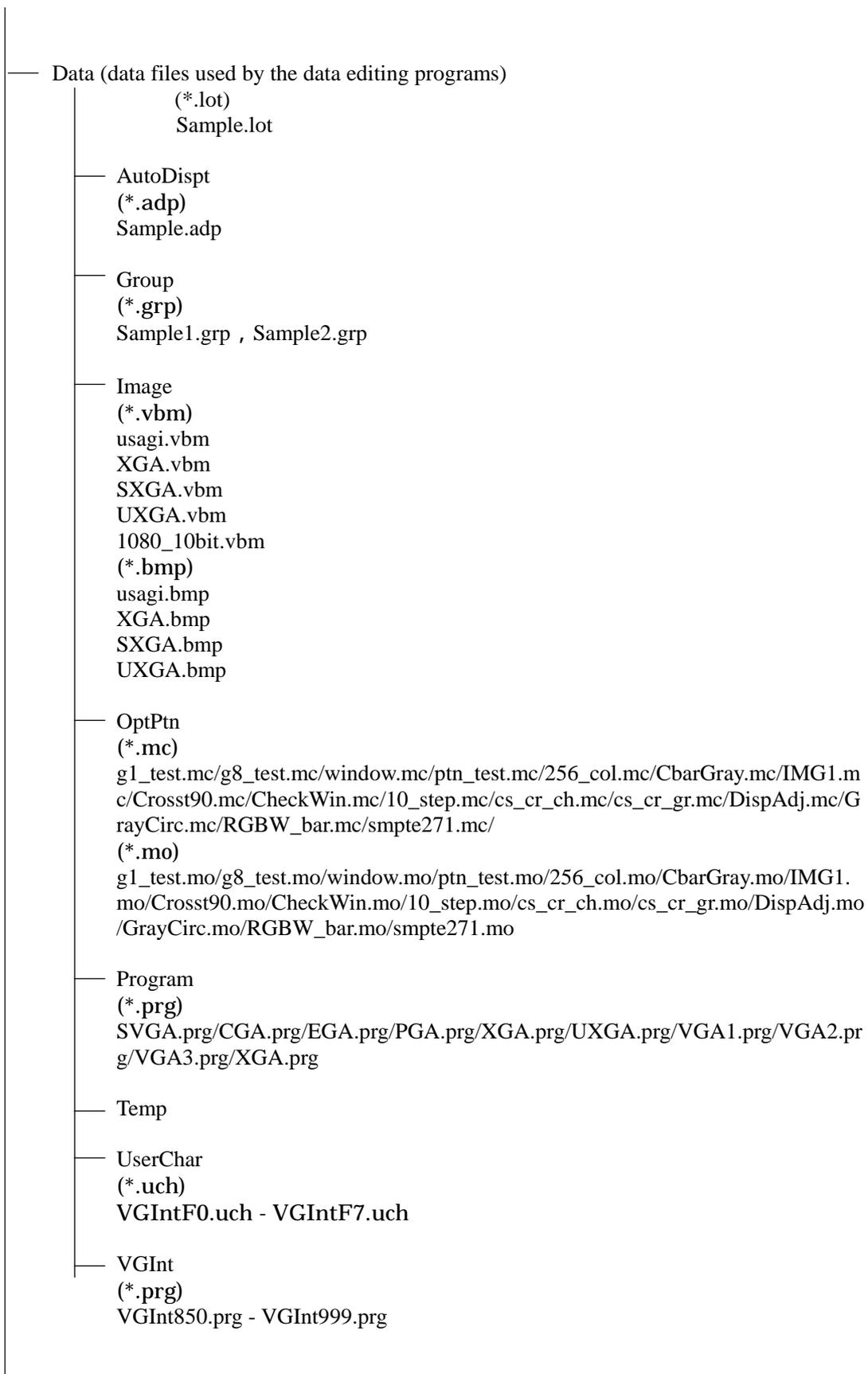
In Windows, select [Start] → [Settings] → [Control Panel] → [Add/Remove Programs], and delete the software by following the on-screen directions.

During this process, the user will be asked whether to delete "VGPIO.vxd" which has been installed in the Windows system directory. Leave it if it is required. However, if the software is to be re-installed, the files and registry settings must be deleted by uninstalling them before proceeding. The data files in the VGInt directory and UserChar directory are read-only files and, as such, they are not deleted by uninstallation. Delete them separately. Similarly, if the USB driver has been installed, it will not be deleted by uninstallation either, so delete it separately.

1.3.4. Directories and files

The directory and files listed below are created by the installation of the software.

Specified directory (default: C:\¥ASTRO¥SP-8848)



Exe (executable files of SP-8848)
 (*.exe)
 ADEdit.exe/CharEdit.exe/CnfgEdit.exe/GrpEdit.exe/LpEdit.exe/OptEdit.exe/PrgEdit.exe/
 VbmCvt.exe/VGBase.exe/VGManage.exe/CDCEdit.exe/CurTool.exe/Monitor.exe/VersionUp.exe/
 (*.dll)
 CmdDll.dll/GuiCmd.dll/ADDll.dll/CharFile.dll/CVSBMP.dll/GrpSetDll.dll/Layout.dll/LimitDll.dll/OptPtnFile.dll/PrgFiles.dll/RegDll.dll/TransDll.dll/TransUsb.dll/DDCEdit.dll/DDCFile.dll/CDCFile.dll/ImgCom3.dll/imged32.dll/ImgEtc3.dll/ImgFile3.dll/ImgTiff3.dll/ImgDsp3.dll/IpDlgl.dll/
 (*.msg)
 SP_VG.msg/SPErr.msg/VGErr.msg/
 OptDoc (text describing how to create the optional patterns)
 make_OPT.txt
 Help (help files)
 (*.hlp)
 ADEdit.hlp/GrpEdit.hlp/PrgEdit.hlp/CnfgEdit.hlp/CharEdit.hlp/VbmCvt.hlp/VGBase.hlp/LpEdit.hlp/OptEdit.hlp/make_opt.hlp/VgManage.hlp/Vgermsg.hlp/Guide.hlp/DDCEdit.hlp/CDCEdit.hlp/CurTool.hlp/VerUP.hlp/
 (*.CNT)
 ADEdit.CNT/GrpEdit.CNT/PrgEdit.CNT/CnfgEdit.CNT/CharEdit.CNT/VbmCvt.CNT/VGBase.CNT/OptEdit.CNT/make_opt.CNT/VgManage.CNT/Guide.CNT/DDCEdit.CNT/CDCEdit.CNT/CurTool.CNT/VerUP.CNT/

1.3.5. Other files

File copied into the [¥Windows¥System] directory by the software installation
 VGPIO.VXD

File copied into the [¥Windows¥System32¥Driver] directory by the USB driver installation
 VGUSB.SYS

File copied into the [¥Windows¥Inf] directory by the USB driver installation
 VGUGB.INF

1.3.6. Registration of Registry

The data is registered in the registry as below.

HKEY_LOCAL_MACHINE
¥Software¥Astrodesign¥SP8848¥

By starting up SP-8848, the data is copied from the above registry to the below registry.

HKEY_CURRENT_USER
¥Software¥Astrodesign¥SP8848¥

When uninstalling it, the data after ¥SP8848 in “HKEY_LOCAL_MACHINE” is deleted, however, the data after ¥SP8848 in “HKEY_CURRENT_USER” is not deleted. If the data after ¥SP8848 in “HKEY_CURRENT_USER” needs to be deleted, it should be done manually.

*** Please be careful when you delete registry data manually. If the data in the wrong place is deleted, the Window OS may not start up.**

*** ASTRODESIGN does not take any responsibility to any result (including direct result and indirect result) after user deletes the registry data manually.**

1.3.7. Usage as Multiple Users

When using SP-8848 by “Multiple Users”, please install it as below.

- (1) Install SP-8848 as “Administrator”. Some files and registries can not be installed if “Administrator” is not selected.
- (2) Re-log-in with the other user name.
- (3) Start up SP-8848. Then, it can be used as it is.

*** If SP-8848 version is before 4.01, please follow the below instruction.**

- (1) Install SP-8848 as “Administrator”. Some files and registries can not be installed if “Administrator” is not selected.
- (2) Re-log-in with the other user name.

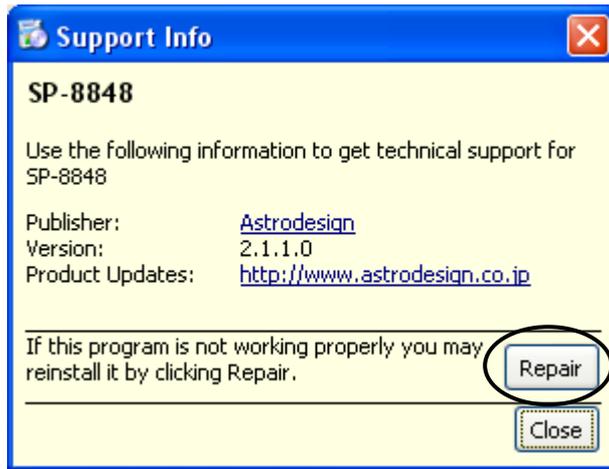
If it is installed as Administrator, Exe file and short cut can be seen with Power Users, however, registry has to be re-installed because it is set by user.

- (3) Select SP-8848 in the [START] – [SET] – [Control Panel] – [Add and delete Application] .

Then, click the below figure.



The below screen is shown.



(4) By pressing "Repair" button, SP-8848 is re-installed.

(5) When repair work is done, SP-8848 can be used.



2

Operation

2.1. General

The basic operations consist of starting up "VGBase," creating and editing data, sending the data to and receiving it from the VG, and storing the created data in the memory. The layout data used by "VGBase" is grouped together in sets, and the data, data numbers, codes, etc. sent to the VG are retained in the memory. (For details on how to create and edit the sets of data, refer to the help sections in the editing programs concerned.)

***Each setting screen is a thing at the time of VG-848 connection. Setting screens may differ at the time of connection with other VG(s).**

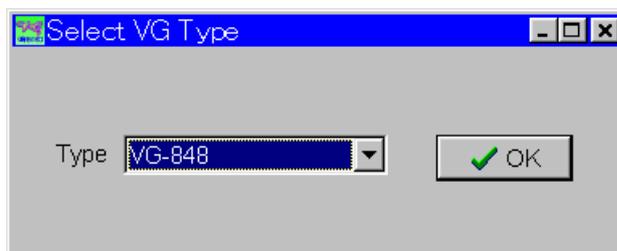
2.2. Starting up VGBase

Procedure for starting up "VGBase"

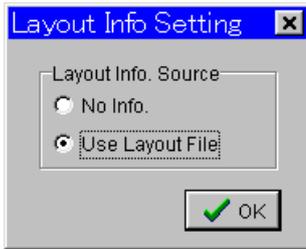
(1) Select [Start] → [Programs] → [SP-8848] → [VGBase].

***When connecting with VG-848, 849, 835, 859 and 830, SP reads the version number of VG when SP starts. If the version is before 2.00, the message appears. When message appears, upgrade the firmware of VG first.**

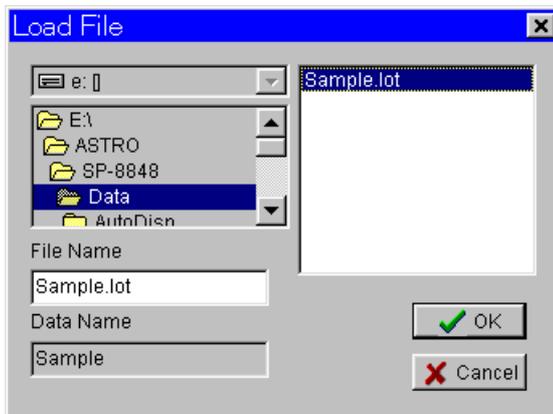
(2) The "Select VG Type" dialog box for setting the VG type now appears. Select the VG Type from the options given in the [Type] combo box, and click the [OK] button. (Once the VG Type is selected, the selection is stored in the memory, and the dialog box will no longer be displayed when the software program is next started up.) Before the "Select VG Type" dialog box appears, a "Warning" message (Com Port Open Error) may be displayed. This means that communication with the VG has not been established: after starting up "VGBase," perform the configuration settings. (See "Configuration settings" in Section 3-3.)



(3) The "Layout Info Setting" (layout data setting) dialog box for setting the data at startup appears. If layout data is to be used, select [Use Layout File], and click the [OK] button. Otherwise, select [No Info], and click the [OK] button. If the no data layout will be used, "VGBase" is started up here.



(4) When the layout data is going to be used, the "Load File" file selection dialog box appears. (It does not appear when the layout data is not going to be used.) Select the "Sample.lot" file in the Data directory (default: "C:\¥Astro¥SP-8848¥Data"), and click the [OK] button. (When a new file is to be created, enter its filename in the [File Name] box.)



(5) The sample layout data is now loaded into "VGBase" and "VGBase" is started up.



In order to perform the interface and other settings, the configuration settings must be performed once when the VG is started up. (See "Configuration settings" in Section 3-3.)

2.3. Closing VGBase

Procedure for closing "VGBase"

Click the [Close] button.

2.4. Configuration settings

Procedure for changing the VG execution mode and other configuration settings

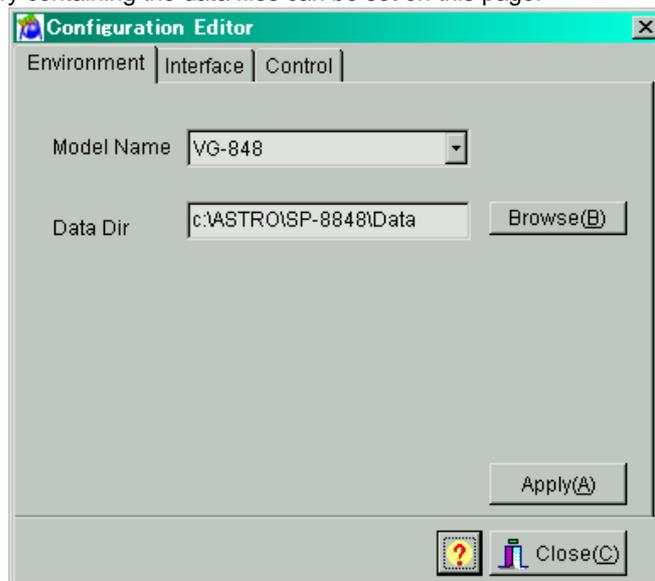
2.4.1. Startup method

Click the [Config] button of "VGBase." This starts up the "Configuration Editor" program which performs the configuration settings.

2.4.2. Window screen and description

Environment page

The directory containing the data files can be set on this page.



Model Name	The VG model name is indicated here.
Data Dir	The directory in which the data is stored is set here. Under normal circumstances, no changes should be made to the directory since it requires a specific structure.

All the settings must match the communication parameters which are set for the VG unit. As such, special care is required when setting or changing the items on

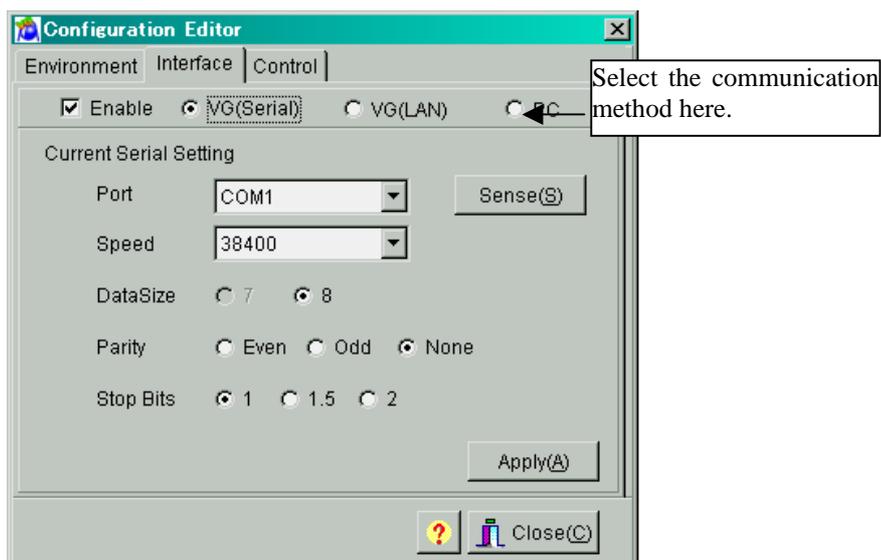
Click [Apply] so that the configuration settings will take effect and the actual changes will be made. When this button is clicked on the [Interface] page, the commands are sent to the VG unit and the settings are changed only if communication is enabled. If communication is disabled, only the configuration data managed by the PC will be updated.

Bear in mind that even when the settings have been changed, these changes will be lost if the software is closed without clicking the [Apply] button first.

Click [Close] to close the configuration setting program.

Interface page

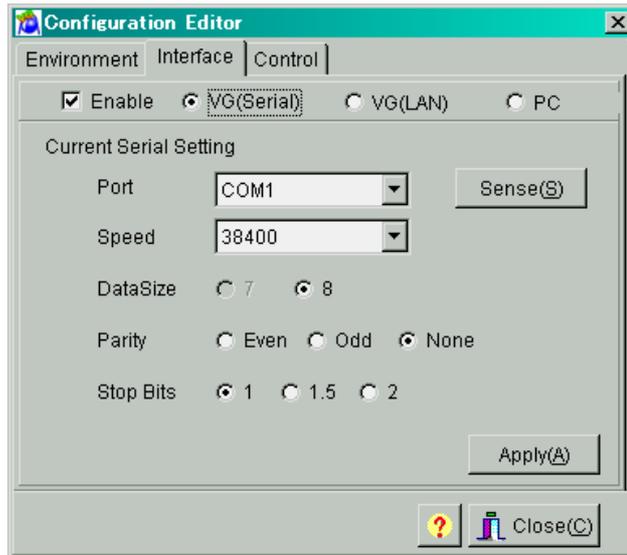
The parameters for communication with the VG unit can be set on this page.



Selecting the communication method

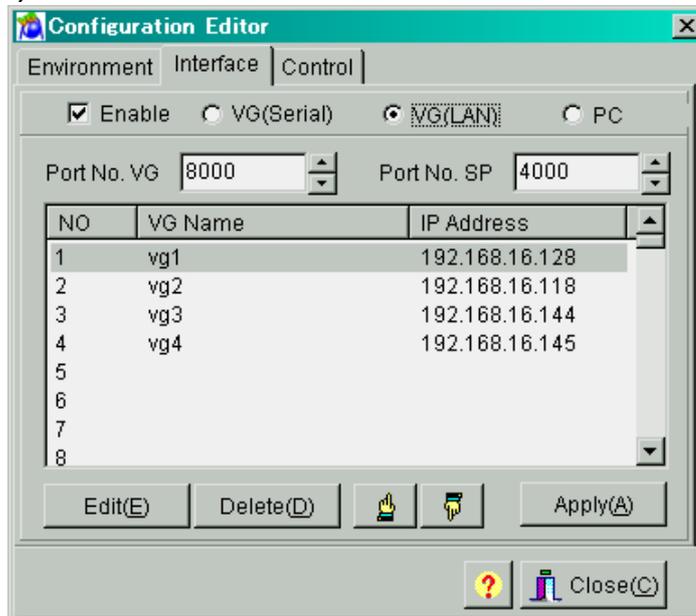
Enable	This setting enables communication and allows "VG (Serial)," "VG (LAN)" or "PC" to be set. The setting items differ depending on the VG model.
VG (Serial)	This setting selects the RS-232C port to be used as the communication method.
VG (LAN)	This setting selects the LAN to be used as the communication method.
PC	This setting selects access to the memory card, which is connected directly to the PC and on which is written the data, as the communication method.

When VG (Serial) has been selected as the communication method:



Port	The port number is selected here.
[Sense] button	This is used to detect the setting speed of the VG automatically.
Speed	9600, 19200, 38400, 57600 or 115200 is selected as the transfer rate setting here.
Data Size	This setting selects the communication data size (fixed at 8 bits).
Parity	Even, Odd or None is selected as the parity setting here.
Stop Bits	1, 1.5 or 2 bits are selected as the Stop Bits setting here.

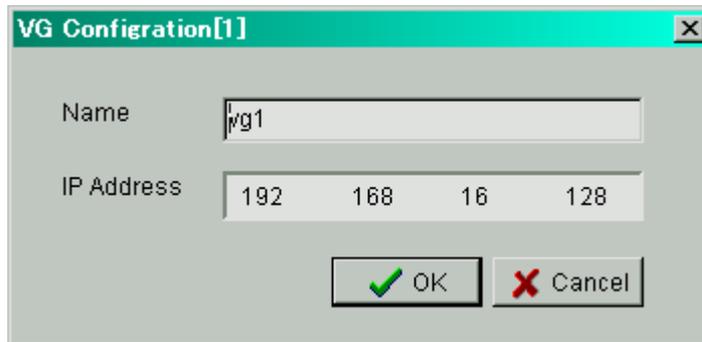
When VG (LAN) has been selected as the communication method:



Port No. VG	The VG port number is selected here. The default setting is 8000. (*1)
Port No. SP	The SP port number is selected here. The default setting is 4000. (*1)
[Edit] button	This is used to display the IP address setting dialog box.
[Delete] button	This is used to delete the VG selected on the list.

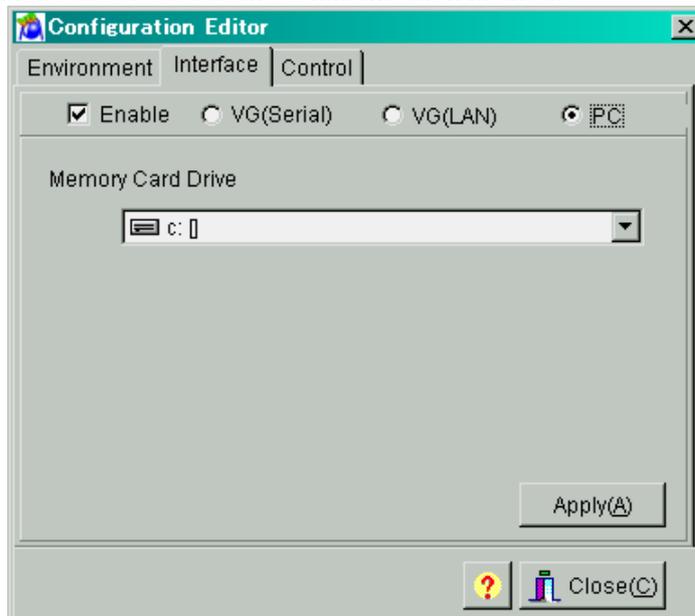
***1: As a general rule, use the default value for the port number. If it cannot be used due to the network connected, change to a different port number for use.**

When the [Edit] button is pressed, a setting dialog box such as the one shown below appears.



Name	The VG name is displayed here.
IP Address	The IP address is displayed here.

When PC has been selected as the communication method:

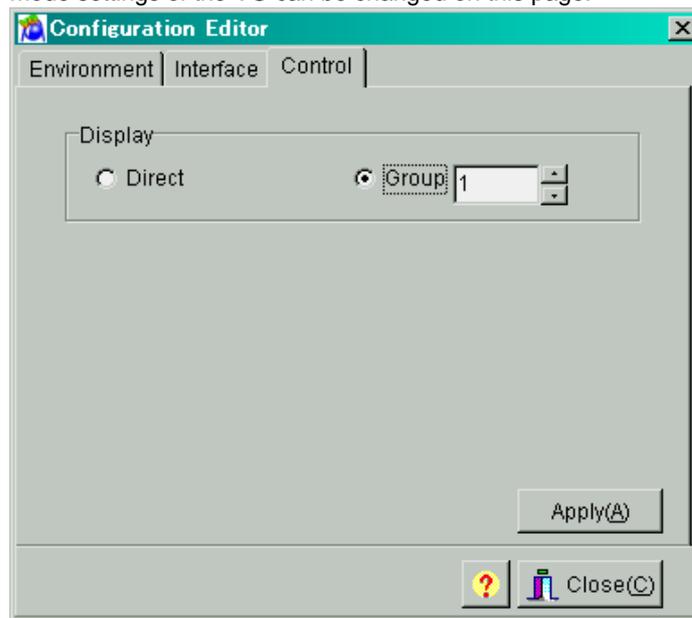


Memory Card Drive	The drive to which the memory card (*) is connected is selected here when PC has been selected as the communication method.
-------------------	---

*Use the Compact Flash (CF) card provided with the VG-848 as a standard accessory for the memory card.

Control page

The display mode settings of the VG can be changed on this page.



Display	"Direct Display" or "Group Display" can be selected here as the display mode. When the "Group Display" mode has been selected, the "Group" number must be specified.
---------	--

2.5. Creating and editing the program data

This section describes how the VG program data is set. Program data can be created, edited, sent to the VG, registered on the panel ROM or memory card, executed and received from the VG.

2.5.1. Startup method

Click the [Program] button of "VGBase" to start up the "Program Editor." When the editor starts up, the timing data setting screen appears as the default display.

2.5.2. Window screens and description

Common setting screen

The screenshot shows the 'Program Editor VGInt850.prg' window. At the top, there are fields for 'No.' (a dropdown menu), 'Program' (a dropdown menu set to 'Enable'), 'HDCP' (a dropdown menu set to 'On'), and 'Name' (a text field containing 'VESA400-85'). A 'Help display' button with a question mark icon is located to the right of the 'Name' field. Below these are tabs for 'TIMING', 'OUTPUT', 'PATTERN', 'ACTION', and 'AUDIO'. Under 'TIMING', there are sub-tabs for 'CAPTION' and 'TELETEXT'. The main area is divided into 'H TIMING' and 'V TIMING' sections. 'H TIMING' includes fields for DotClock (31.500 MHz), Freq (37.86 KHz), Period (26.41 us), Disp (20.32 us), Sync (2.03 us), Backp (3.05 us), Start (0.00 us), and Width (0.00 us). 'V TIMING' includes fields for Scan (NON INTERLACE), EQP (OFF), Serration (OFF), Freq (85.08 Hz), Total (11.754 ms), Disp (10.585 ms), Sync (0.079 ms), Backp (1.083 ms), EQP fp (0.000 ms), EQP bp (0.000 ms), Start (0.000 ms), and Line (0.000 ms). At the bottom, there are fields for Fp(dot) (32), Blank(dot) (192), Fp(H) (1), and Blank(ms) (1.189). On the right side, there is a vertical toolbar with buttons: Show ERR, Execute, Load, Save, Save As, Send, Receive, Print, and Close. Callouts with arrows point to the 'Program data number' (the 'No.' dropdown), 'Filename' (the 'Name' field), 'Help display' (the question mark icon), and 'Tool buttons' (the vertical toolbar).

Program number

The number of the program data registered in the VG is displayed here.

Enable

Whether the program is to be sent to the VG and executed is set here.

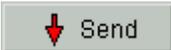
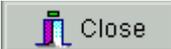
Filename

The name of the file currently opened is displayed here.

Help

Help details are displayed by pressing the  button.

Tool buttons

- Show Err:** When the  button is clicked, the error window is displayed. Check the values of the data which has been set. If a value outside the setting range has been input, which data contains the error is indicated on the error description display screen.
- Execute:** When the  button is clicked, the program data now being edited is executed without its being registered in the VG.
- Load:** When the  button is clicked, the program data is loaded.
- Save:** When the  [Save] button is clicked, the program data is saved in the file and any existing data in that file is overwritten.
- Save As:** When the  button is clicked, the program data is saved in the file.
- Send:** When the  button is clicked, the program data now being edited is sent to the VG.
- Receive:** When the  button is clicked, the program data is received from the VG.
- Print:** When the  button is clicked, the program data is printed.
- Close:** When the  button is clicked, the program whose data has been edited is closed.

Basic operations

Loading a file

Before creating new data, proceed with "Creating and editing the program data" in (2) on the next page.

- 1) Press the [Load] button to open the "Load File" file selection dialog box.
- 2) Select the filename.
- 3) Select the type of the program data ([Timing], [Output], [Pattern] or [Action]) to be loaded, and press the [OK] button. Only the selected data is now loaded. The data which has not been selected is not updated.
- 4) The data of the selected file is displayed in the program data editing program.
 - If the layout has been set
The number of the program data registered in the layout is displayed at [No.].
 - If the layout has not been set
[No.] is cleared.

(*)When [Internal Program] has been checked

Load the file containing the program data registered in the ROM inside the VG. However, NTSC, PAL, SECAM, 1080i, 1080p, 1035i and 720p signals are standard signals and, as such, they cannot be edited using this software.

Filename	Program data No.
VGInt850.prg	850
:	:
VGInt999.prg	999

When, while loading the data of an old model, the data of setting items featured with the VG-848 but not with the old model has been loaded into the SP-8848, default values (0 or the minimum value) will be entered into those items. For details, refer to the SP-8848 help or the instruction manual of the VG concerned.

Creating and editing the program data

To set the timing data (horizontal timing, vertical timing):

→ Click the [TIMING] button.

To set the output conditions (analog output, digital output):

→ Click τηε [OUTPUT] or [ANALOG OUTPUT] or [DIGITAL OUTPUT] button.

To set the pattern data (selecting the display pattern, setting the pattern data):

→ Click τηε [PATTERN] button.

To set the action data:

→ Click the [ACTION] button.

To set the audio data:

→ Click the [AUDIO] button.

(*) A setting with an error is displayed in red. A list of setting errors can be viewed by pressing [Show ERR].

With some VG models, changes have been made to the screens, setting items, setting value ranges, etc. For details, refer to the SP-8848 help or the instruction manual of the VG concerned.

Saving the file

After changing the program data, click the [Save] button or [Save As] button to save the data in the file.

- When the [Save] button is clicked:
The data is saved in the file and any existing data in that file is overwritten.
- When the [Save As] button is clicked:

- 1) The "Save File" file selection dialog box appears.
- 2) Input the filename, and select the [OK] button. The displayed data is now saved in the new file.

Sending the program data

- 1) Select the [Send] button. The "Send to VG" number selection dialog box appears.
- 2) Set the number (0 to 849) of the program data.

Data number		
0		After the data is sent, it is executed immediately without being registered.
1 - 849	[with Execute] checked	After the data is sent, it is registered and executed immediately.
	[with Execute] unchecked	After the data is sent, it is not executed but only registered.

- 3) Click the [OK] button. The data is now sent to the VG. (The number of the data sent now replaces the previous number appearing in [No.])
- (*) The name of the program data can be set by inputting it into [Program Name] of the [NAME] program data name setting tab on the pattern data setting screen.

Receiving the program data

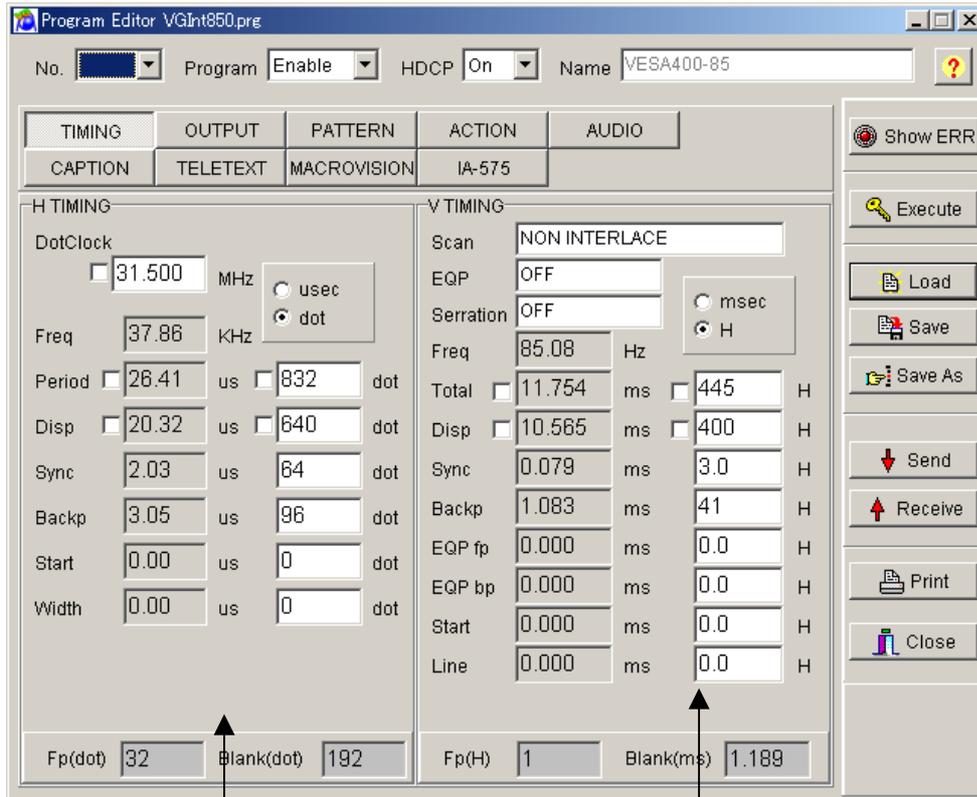
- 1) Select the [Receive] button. The "Receive from VG" number selection dialog box appears.
- 2) Set the number (1 to 999) of the program data.
- 3) Select the data (Timing, Output, Pattern or Action) to be received, and click the [OK] button. Only the data selected is loaded. Unselected data is not updated.
- 4) The data is received from the VG. (The number of the data received now replaces the previous number appearing in [No.])

Printing the program data

- 1) Click the [Print] button to print the data prepared.
- 2) The "Print" dialog box appears. Set the margins here.
- 3) Click the [OK] button. The displayed data is now printed.
- 4) To change the printer which has been set, click the [Set Printer...] button.
- 5) The printer setting dialog box appears. Perform the printer settings. For details on how the items on this dialog box are set, refer to the instruction manual for Windows or for the printer which will be used.

Program data can be received using an old VG model but except VG-828 it cannot be sent to one.

Timing data setting screen



Horizontal timing data setting

Vertical timing data setting screen

[Setting the data]

Align the mouse cursor with the data to be changed, and click the mouse. The data can now be keyed in.

[Setting the input mode]

Select microseconds (usec), dots or kHz as the units for the horizontal timing (H TIMING) data and milliseconds (msec), H or Hz as the units for the vertical timing (V TIMING) data. The check box enabling the unit to be input changes.

[Setting the fixed mode]

A fixed mode is provided for DotClock, Period and Disp of the horizontal timing (H TIMING) data and Total and Disp of the vertical timing (V TIMING) data so that these data items will not be changed when other data items (such as DotClock and Period) have been changed. Check the fixed mode if changes are not going to be made to these data items.

Timing data settings**[Frequencies]**

Dot clock frequency	5.000 to 300.000 MHz
Horizontal sync frequency	10.000 to 300.000 kHz
Vertical sync frequency	15.600 to 200.000 Hz

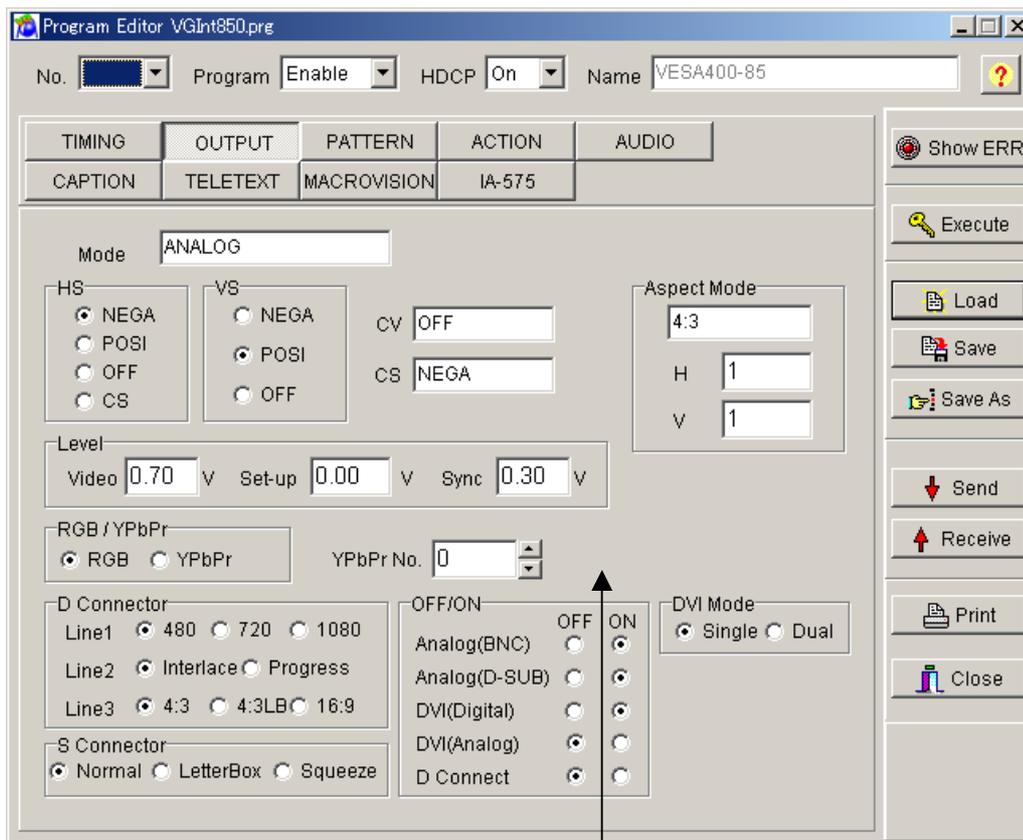
[Horizontal timing data]

H Period	0.000 to 99.999 μ sec	128 to 8192 dot	1-dot increments
H Disp	0.000 to 99.999 μ sec	48 to 4096 dot	1-dot increments
H Sync	0.000 to 99.999 μ sec	0 to 4096 dot	1-dot increments
H Backp	0.000 to 99.999 μ sec	0 to 4096 dot	1-dot increments
H Frontp			
HD start	0.000 to 99.999 μ sec	0 to 4096 dot	1-dot increments
HD width			
H Blanking	Calculated automatically		1-dot increments

[Vertical timing data]

V Total	0.000 to 99.999msec	4.0 to 8192 H	1H increments
V Disp	0.000 to 99.999msec	1.0 to 4093 H	1H increments
V Backp	0.000 to 99.999msec	0.0 to 4000 H	1H increments
V Sync	0.000 to 99.999msec	1.0 to 99 H	1H increments
EQP fp	0.000 to 99.999msec	0.0 to 99 H	1H increments
EQP bp	0.000 to 99.999msec	0.0 to 99 H	1H increments
Start	0.000 to 99.999msec	0.0 to 4095 H	1H increments
Line	0.000 to 99.999msec	0.0 to 4095 H	1H increments

Output condition data setting screen



Output condition data setting screen

[Setting the data]

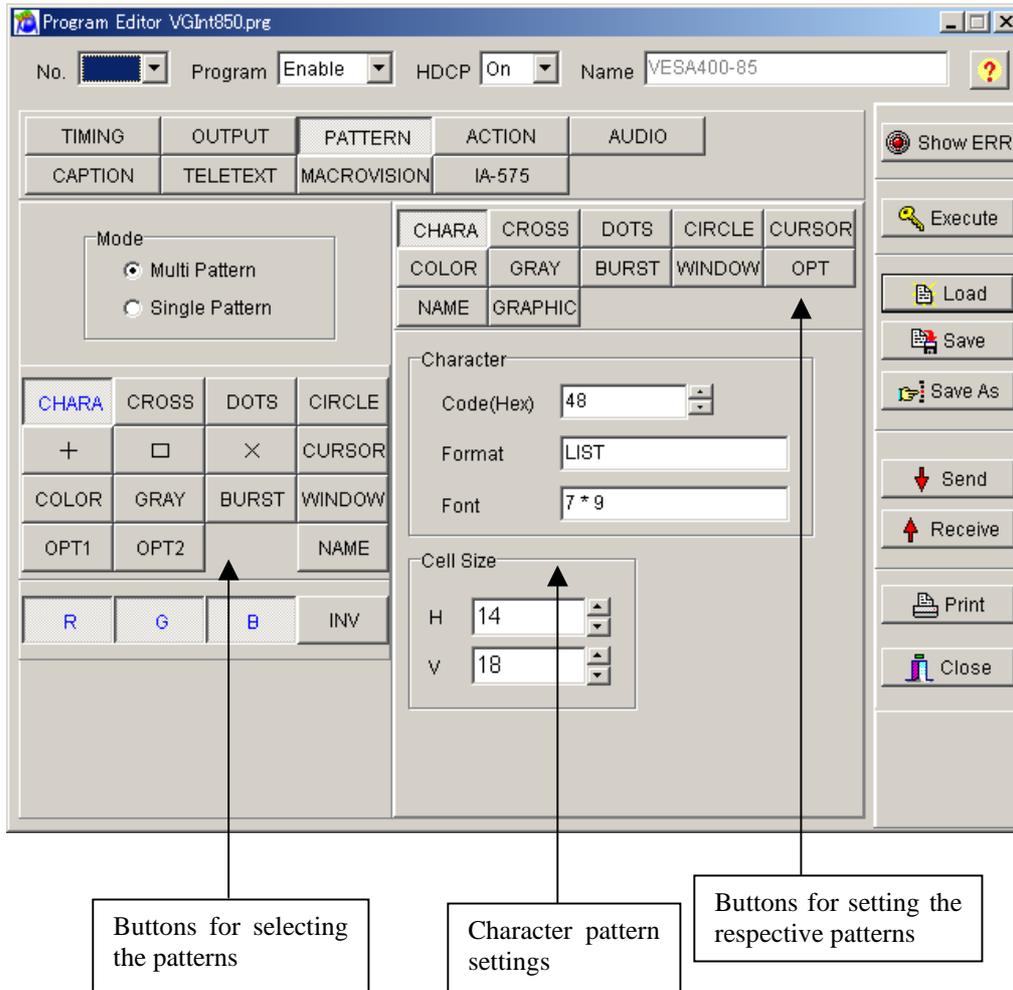
Select the applicable radio buttons.

Where an edit box is provided, align the mouse cursor with the data to be changed, and click the mouse. The data can now be keyed in.

Output condition data settings

Mode	ANALOG, Tri-Sync (1080) ,Tri-Sync (720) ,NTSC ,PAL ,SECAM is selected here.
HS	"NEGA," "POSI" or "OFF" is selected here as the HS polarity setting.
VS	"NEGA," "POSI" or "OFF" is selected here as the VS polarity setting.
CV	"OFF," "R," "G," "RG," "B," "RB," "GB" or "RGB" is selected here as the CV setting.
CS	"NEGA," "POSI" or "OFF" is selected here as the CS polarity setting.
VIDEO LEVEL	A voltage level from 0.3 to 1.0V is set here as the video level.
SET UP	A voltage level from 0 to 0.25V is set here as the setup level.
SYNC LEVEL	A voltage level from 0 to 0.06V is set here as the sync level.
PbPr No.	A number from 0 to 9 is set here as the color difference table number.
RGB/Y,B-Y,R-Y	Either "RGB" or "Y,B-Y,R-Y" is set here as the color difference setting.
DVI Mode	Either "Single" or "Dual" is selected here as the DVI output setting.
D Conector(Line1)	"480," "720" or "1080" is selected here as the Line1 setting.
D Conector(Line2)	"Interlace" or "Progress(ive)" is selected here as the Line2 setting.
D Conector(Line3)	"4:3," "4:3LB" or "16:9" is selected here as the Line3 setting.
S Conector	"Normal," "Letter Box" or "Squeeze" is selected here as the S Connector output.
Analog(BNC)	"ON" or "OFF" is selected here as the Analog (BNC) setting.
Analog(D-SUB)	"ON" or "OFF" is selected here as the Analog (D-SUB) setting.
DVI(Digital)	"ON" or "OFF" is selected here as the DVI (Digital) setting.
DVI(Analog)	"ON" or "OFF" is selected here as the DVI (Analog) setting.
D Conect	"ON" or "OFF" is selected here as the D Connect setting.

Pattern data setting screen



Buttons for selecting the patterns

Character pattern settings

Buttons for setting the respective patterns

Selecting the patterns

Select the pattern to be displayed while the VG is running.

Select "Multi Pattern" or "Single Pattern" as the Mode setting. ("Multi Pattern" is the default.) NAME, R, G, B and INV can be set at the same time for any of the patterns.

When "Multi Pattern" is selected : The OPT1 and OPT2 patterns cannot be set at the same time. A multiple number of the other patterns can be set at the same time.

When "Single Pattern" is selected : A multiple number of patterns cannot be set at the same time.

Pattern selection

CHARA	Character
CROSS	Crosshatch
DOTS	Dots
CIRCLE	Circle
	Center marker
	Edge marker
	Diagonal line
CURSOR	Cursor
NAME	Program data name
COLOR	Color bar
GRAY	Gray scale
BURST	Burst
WINDOW	Window
OPTI 1	Optional pattern 1
OPT2	Optional pattern 2
R	Red output
G	Green output
B	Blue output
INV	Inversion

Pattern settings**CHARA: Character pattern**

This button is used to set the character pattern.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Character

Code(Hex)

Format

Font

Cell Size

H

V

Code	The character code is set here.
Format	The format of the character pattern which has been set is selected here.
Font	The font size is selected here.
Cell size	The horizontal cell size (H) and vertical cell size (V) are selected here.

CROSS: Crosshatch pattern

This button is used to set the crosshatch pattern.

The crosshatch pattern is always displayed after the screen center has been calculated. The screen center can be calculated when the number of display dots and number of display lines are odd numbers. However, when they are even numbers, the actual screen center will be one dot to the right and one line below the center. An error results when 0 is set for both H and V.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Mode	Format
<input checked="" type="radio"/> line <input type="radio"/> dot	From Center

Interval	H	20	line
	V	20	line

Width	H	1	dot
	V	1	dot

Mode	Specification as a number of lines (line) or dot intervals (dot) is selected here as the mode setting.
Format	The save start point (From Center or From Top Left) is selected here.
Interval	The number of lines (when "line" has been selected) or the dot interval (when "dot" has been selected) of the crosshatch pattern is set here.
Width	The width of the drawn lines is set here.

DOTS: Dot pattern

This button is used to set the dot pattern.

The dot pattern is always displayed after the screen center has been calculated. The screen center can be calculated when the number of display dots and number of display lines are odd numbers. However, when they are even numbers, the actual screen center will be one dot to the right and one line below the center. An error results when 0 is set for both H and V.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Mode

Line

dot

Format

From Center

Interval

H line

V line

Dot

Size

Type

Mode	Specification as a number of lines (line) or dot intervals (dot) is selected here as the mode setting.
Format	The save start point (From Center or From Top Left) is selected here.
Interval	The number of lines (when "line" has been selected) or the dot interval (when "dot" has been selected) of the dot pattern is set here.
Dot size	The dot size is set here.
Dot type	The type of dots is set here.

CIRCLE: Circle pattern

This button is used to set the circle pattern.

The number of circles, etc. can be set.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Format

Format 0

Aspect

H 0

V 0

Format	This is selected on the basis of the data which has been set.
Aspect	The aspect ratio of the monitor is set here. The ratio is considered to be 1:1 when 0 is used for H or V setting.

CURSOR: Cursor pattern

This button is used to set the cursor pattern.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Cursor

Format

Flicker

PosDisp

Step

Color

R G B

BackGround Color

R G B

Format	The shape of the cursor is selected here.
Flicker	The flicker setting is selected here.
Position (PosDisp)	The method of displaying the cursor position is selected here.
Step	The cursor movement step is selected here.
Color	The RGB values of the cursor are selected here.
Background Color	The RGB values of the background color are selected here.

COLOR: Color bar pattern

This button is used to set the color bar pattern.

The color bar pattern is always drawn in accordance with the interval provided and from the top left corner toward the screen center. This interval setting is used for both color bar and gray scale.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Mode	Repeat	Interval
<input checked="" type="radio"/> %	16	H 6.3 %
<input type="radio"/> dot		V 6.3 %
	Direction	
	Horizontal	

Color			
0	NOT	1 R	2 G
3	RG	4 B	5 R B
6	GB	7 RGB	8 NOT
9	R	A G	B RG
C	B	D R B	E GB
F	RGB		

Mode	The interval setting increment (specified as a percentage or dot number) is selected here.
Interval	The horizontal (H) width and vertical (V) width are selected here.
Direction	The layout direction is selected here.
Chapter 5 Repeat	The color values from 0 to repeat are set here when level values are to be used repeatedly.
Color	The RGB values are set here.

GRAY: Gray scale pattern

This button is used to set the gray scale pattern.

When the analog mode or Tri-Sync has been selected as the output condition "Mode" setting, "Level" can be set; when the TTL mode has been selected, "Color" can be set.

The gray scale pattern is always drawn in accordance with the interval provided and from the top left corner toward the screen center.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			
Mode		Direction	Interval	
<input checked="" type="radio"/> % <input type="radio"/> dot		Horizontal	H	6.3 %
		Repeat	V	6.3 %
		16		
Level				
0	17	34		
3	51	68	85	
6	102	119	136	
A	153	170	B	187
C	204	D	221	E
F	255			

Mode	The interval setting increment is selected here.
Direction	The layout direction is selected here.
Repeat	The color values from 0 to repeat are set here when level values are to be used repeatedly.
Interval	The interval between the shades of gray is set here.

When the analog mode or Tri-Sync has been selected as the output condition "Mode" setting:

Level : The gray display levels are set here.

When the TTL mode has been selected as the output condition "Mode" setting:

Color : The halftone levels are set here.

*** 8bit or 10bit can be selected in VG-835. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode.**

*** 8bit , 10bit and 12bit can be selected in VG-835-A. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode, 0 to 4095 in 12 bit mode.**

BURST: Burst pattern

This button is used to set the burst pattern.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Format
Left -> Right

Step
1 dot

Interval
5

Format	The drawing start point is selected here.
Step	The increment for the thickness of the vertical lines is selected here.
Interval	The number of vertical lines of the same thickness which are to be displayed is selected here.

WINDOW: Window pattern

This button is used to select the window pattern.

When the analog mode or Tri-Sync has been selected as the output condition "Mode" setting, "Analog Color" can be set; when the TTL mode has been selected, "TTL Color" can be set.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Mode	Format
<input checked="" type="radio"/> % <input type="radio"/> dot	1 Window
Size	Flicker
H 20.0 %	4Level
V 20.0 %	Flicker Level
Analog Color	TTL Color
R 255 G 255 B 255	Video NOT
	HalfTone NOT
Position(Format = Usr Pos)	
#1 H 0.0 %	#2 H 0.0 %
#1 V 0.0 %	#2 V 0.0 %

Mode	The size setting increment (specified as a percentage or dot number) is selected here.
Size	The horizontal size (H) and vertical size (V) are selected here.
Format	The window already set is selected here.
Flicker	The scroll speed is selected here. * The "Flicker Level" button becomes effective if it is set in 4Level and 16Level. Then, each set screen is displayed.
Flicker Level button	Setting screen of Window 4Level Flicker and Window 16 Level Flicker is displayed.

When the analog mode or Tri-Sync has been selected as the output condition "Mode" setting:

Analog RGB : The window colors are set here.

When the TTL mode has been selected as the output condition "Mode" setting:

TTL Color : The Video and halftone values are set here.

*** 8bit or 10bit can be selected in VG-835 and VG-857. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode.**

*** 8bit , 10bit and 12bit can be selected in VG-835-A , VG-849C and VG-859C. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode, 0 to 4095 in 12 bit mode.**

WINDOW: Window 4Level Flicker

Set the value of Window 4 Level Flicker. Window level can be set 4-level. Each level can output in the setting time (V unit).

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Time

#0 V #1 V

#2 V #3 V

Level #0

R G B

Level #1

R G B

Level #2

R G B

Level #3

R G B

Time	The flicker time is set. 0 to 255 v
Level	The flicker level is set. 0 to 255
Close	The Window 4Level Flicker setting screen is ended, and it returns to the Window setting screen.

* 8bit or 10bit can be selected in VG-835. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode.

* 8bit , 10bit and 12bit can be selected in VG-835-A. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode, 0 to 4095 in 12 bit mode.

WINDOW: Window 16Level Flicker

Set the value of Window 16Level Flicker. Window level can be set 16-level. Each level can output in the setting time (V unit).

The screenshot shows a software window titled "WindowFlickerForm" with a light beige background and a blue title bar. The interface is organized into two main sections, each containing 8 levels. Each level has a "Time" field (a numeric input with a "V" unit) and an RGB color selection area with three spinners labeled "R", "G", and "B".

Level #0-7 (Top Section):

- Level #0: Time 8, R 255, G 255, B 255
- Level #1: Time 24, R 240, G 240, B 240
- Level #2: Time 8, R 20, G 20, B 20
- Level #3: Time 20, R 32, G 32, B 32
- Level #4: Time 1, R 0, G 0, B 0
- Level #5: Time 60, R 127, G 127, B 127
- Level #6: Time 0, R 0, G 0, B 0
- Level #7: Time 0, R 0, G 0, B 0

Level #8-15 (Bottom Section):

- Level #8-15: All Time fields are set to 0, and all RGB values are set to 0.

A "Close" button is located at the bottom right of the window.

Time	The flicker time is set. 0 to 255 v
Level	The flicker level is set. 0 to 255
Close	The Window 16Level Flicker setting screen is ended, and it returns to the Window setting screen.

* 8bit or 10bit can be selected in VG-835. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode.

* 8bit , 10bit and 12bit can be selected in VG-835-A. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode, 0 to 4095 in 12 bit mode.

OPT: Optional pattern

This is used to set the optional patterns.

When an optional pattern is set, no other patterns can be superimposed onto it.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

OPT1	
Code(Hex)	<input type="text" value="0"/>

OPT2	
Code(Hex)	<input type="text" value="25"/>

Option 1 (OPT1)	The hexadecimal code of the optional pattern is set here.
Option 2 (OPT2)	The hexadecimal code of the optional pattern is set here.

NAME: Program data name

This is used to display the name of the program data displayed.

A new program data name can be set by inputting the name into "Program Name" of the program data name setting tab on the pattern data setting screen and saving it or sending it to the VG. The same procedure is adopted for changing a name.

CHARA	CROSS	DOTS	CIRCLE	CURSOR
COLOR	GRAY	BURST	WINDOW	OPT
NAME	GRAPHIC			

Program Name	
VESA400-85	
Style	
Position	LeftTop
Font	7 * 9

GRAPHIC: Graphic color

This is used to set the graphic colors.

When the analog mode or Tri-Sync has been selected as the output condition "Mode" setting, "Analog Color" can be set; when the TTL mode has been selected, "TTL Color" can be set.

CHARA	CROSS	DOTS	CIRCLE	CURSOR	
COLOR	GRAY	BURST	WINDOW	OPT	
NAME	GRAPHIC				
Analog Color					
R	255	G	255	B	255
TTL Color					
Video	NOT				
HalfTone	NOT				
BackGround					
On/Off	OFF				
BackGround Color					
R	0	G	0	B	0

When the analog mode or Tri-Sync has been selected as the output condition "Mode" setting:

Analog color : The RGB values are set here.

When the TTL mode has been selected as the output condition "Mode" setting:

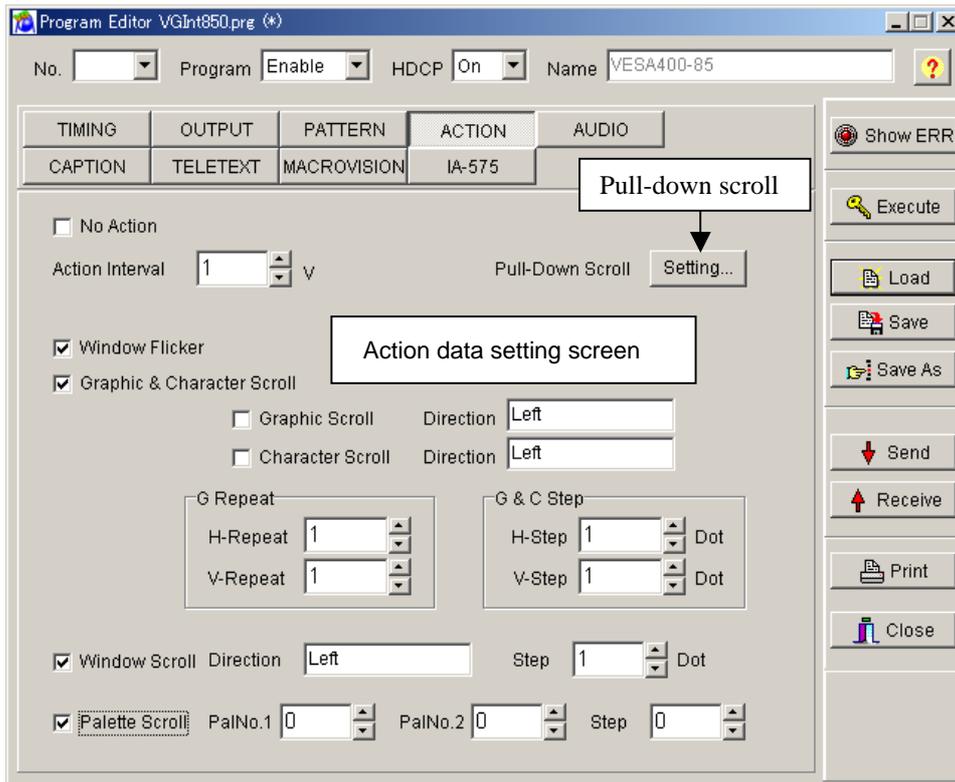
TTL Color : The TTL color values are set here.

Background	ON or OFF is selected here.
Background Color	The RGB values of the background color are set here.

*** 8bit or 10bit can be selected in VG-835. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode.**

*** 8bit , 10bit and 12bit can be selected in VG-835-A. The level can be set between 0 to 255 in 8 bit mode, 0 to 1023 in 10 bit mode, 0 to 4095 in 12 bit mode.**

Action data setting screen



Action data setting screen

Click the check box to the left of the action data type to be set to check it. The setting items for each type can now be selected.

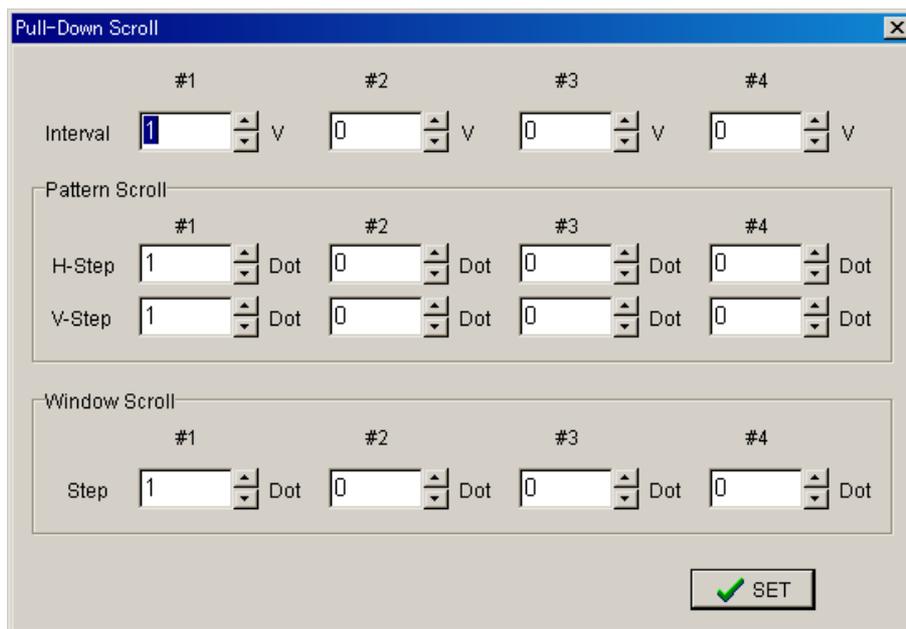
Pull-down scroll

Scrolling can be simulated by employing the 2-3 pull-down function and other scroll functions.

2-3 pull down function

This is a conversion method for ensuring the coordination of 30 fps/60-field NTSC signals with 24 fps films when converting regular movies and other film sources into video signals. The first frame of the film is converted into the equivalent of 2 fields and the second frame into the equivalent of 3 fields, and the resulting 5-field format for every 2 film frames is repeated so that 24 frames are converted into 60 fields. DVD players which support a progressive output capability can detect this 2-3 pull-down processing information and reproduce the 24 original frames. However, a TV monitor which supports the progressive system must be used for playback.

Pattern pull-down scroll setting screen



Interval2	The interval from 0 to 999V is set here.
Interval3	The interval from 0 to 999V is set here.
Interval4	The interval from 0 to 999V is set here.

Pattern

H Step2	The number of steps from 0 to 4095 dots is set here.
H Step3	The number of steps from 0 to 4095 dots is set here.
H Step4	The number of steps from 0 to 4095 dots is set here.
V Step2	The number of steps from 0 to 4095 dots is set here.
V Step3	The number of steps from 0 to 4095 dots is set here.
V Step4	The number of steps from 0 to 4095 dots is set here.

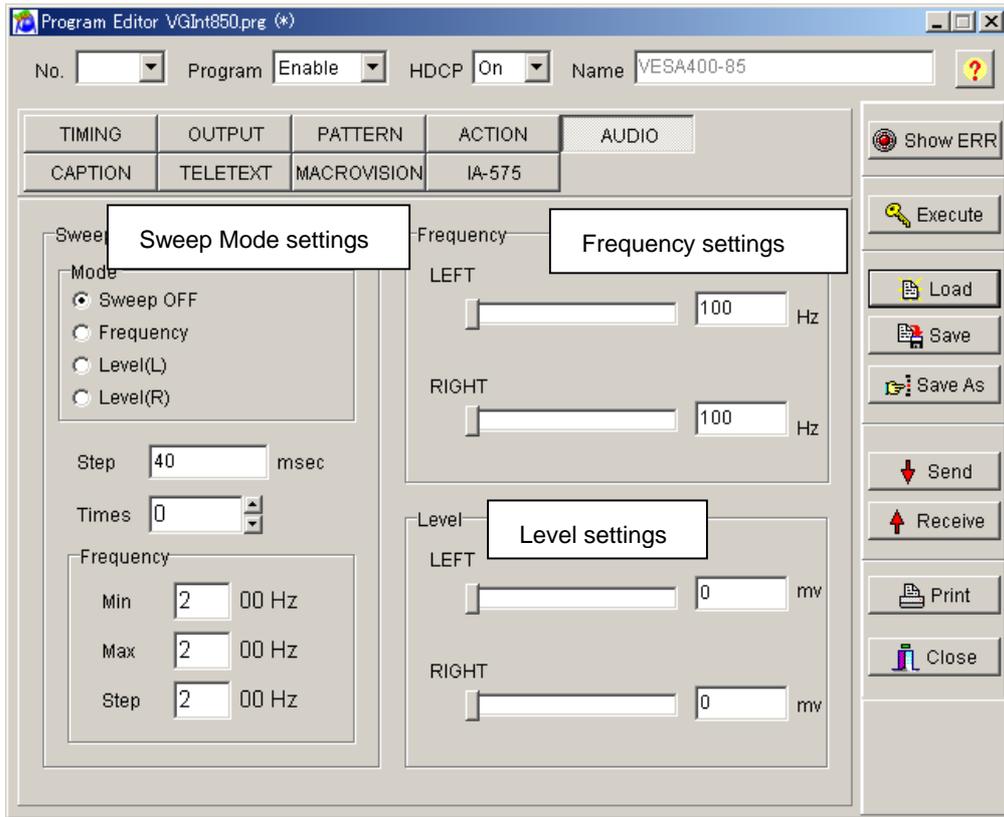
Window

Step2	The number of steps from 0 to 255 dots is set here.
Step3	The number of steps from 0 to 255 dots is set here.
Step4	The number of steps from 0 to 255 dots is set here.

Setting ranges

Action interval	Action Interval	1 to 999 V
	Interval2	0 to 999 V
	Interval3	0 to 999 V
	Interval4	0 to 999 V
Character flicker		ON/OFF
Window flicker		ON/OFF
Pattern scroll	Character Scroll	Left, Right, Up, Down, LeftUp, RightUp, RightDown, Moving
	Graphic Scroll	Left, Right, Up, Down, LeftUp, RightUp, RightDown, Moving
	H Repeat	1 to 15
	V Repeat	1 to 15
	H Step	1 to 4096 dots
	V Step	1 to 4096 dots
	H Step2	0 to 4096 dot
	V Step2	0 to 4096 dot
	H Step3	0 to 4096 dot
	V Step3	0 to 4096 dot
	H Step4	0 to 4096 dot
	V Step4	0 to 4096 dot
Window scroll		Left, Right, Up, Down, LeftUp, RightUp, RightDown, Moving
	Step	1 to 255 dot
	Step2	0 to 255 dot
	Step3	0 to 255 dot
	Step4	0 to 255 dot
Palette scroll	PalNo.1	0 to 255
	PalNo.2	0 to 255
	Step	-128 to 127

Audio data setting screen



Sweep Mode

"Sweep OFF," "Frequency," "LEVEL(L)" or "LEVEL(R)" is selected as the Sweep Mode setting.

Frequency

The frequency is set in the LEFT and RIGHT fields.

Any frequency from 100 to 20,000 Hz can be set in each field.

The settings are performed in 100 Hz increments.

Level

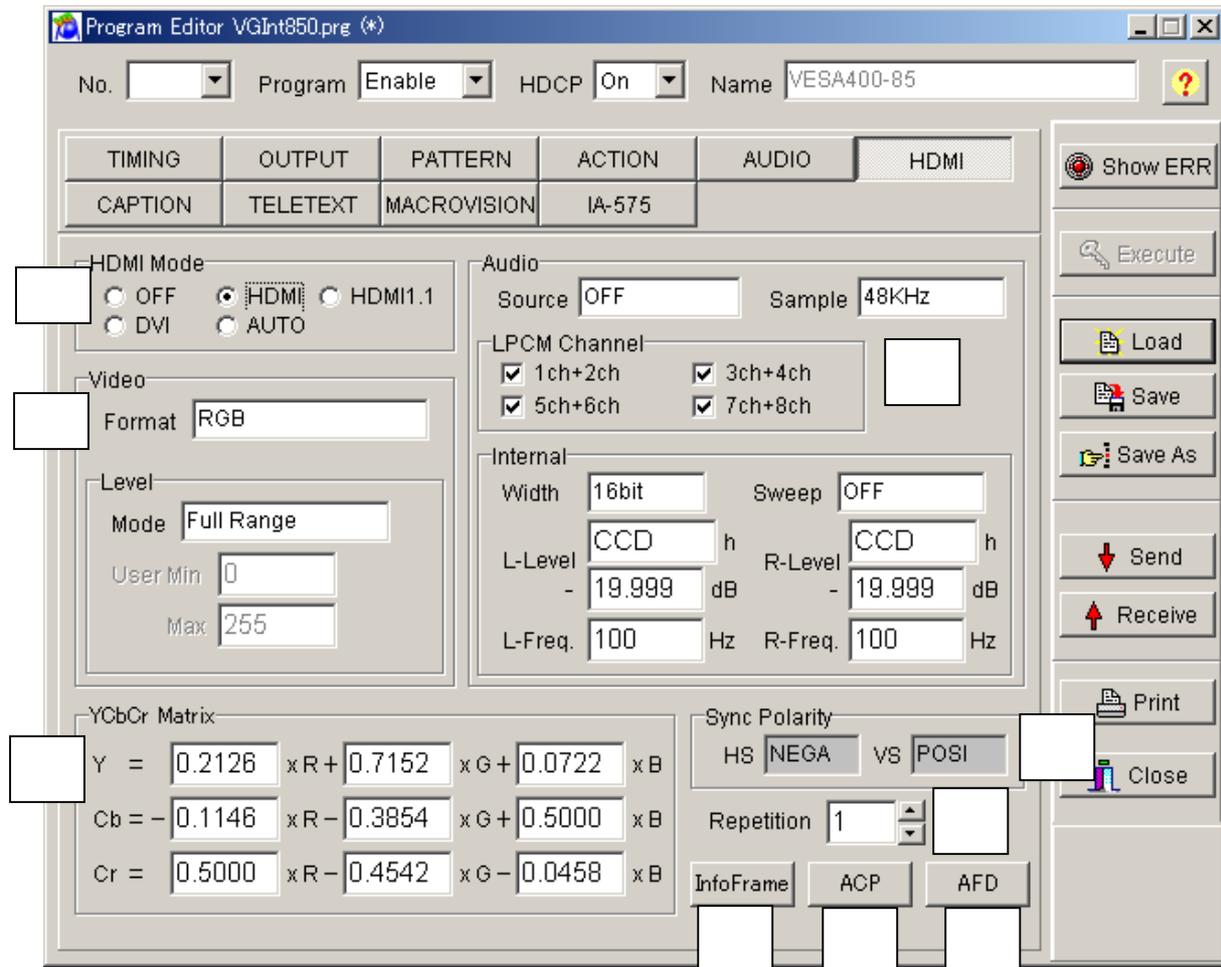
The level is set in the LEFT and RIGHT fields.

Any level from 0 to 2000 mV can be set in each field.

The settings are performed in 50 mV increments.

HDMI data setting screen

A setting screen is a thing at the time of VG-849 selection.



No.	Item name	Details
	HDMI Mode	Set HDMI output mode. Select from OFF, HDMI, HDMI1.1, DVI, or AUTO.
	Video	<ul style="list-style-type: none"> •Video Fomat Select the video format. Select from RGB, Y444, Y422_16, Y422_20, or Y422_24. •Video Level Set the format of the video level. Select from Full range, Limited range, or USER. If "USER" is selected, it is possible to input setting range by video format. RGB, Y444, Y422_16 = 0 to 255 Y422_20 = 0 to 1023 Y422_24 = 0 to 4095
	Audio	<ul style="list-style-type: none"> •Audio Source Select the output signal of the HDMI standard. Select from OFF, TOSLINK, COAX, ANALOG or INTERNAL. •Audio Sample Freq Set the frequency. Select from 32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, or 192kHz. •Audio Width Set the audio bit width. Select from 16bit, 20bit or 24bit. •Audio Internal Sweep Set the internal Sweep. Select from OFF or Freq. •Audio Internal L-R Level Set the audio output level. The max value differs by the setting of AudioWidth item. 16bit : 7FFF 20bit : 7FFFFF 24bit : 7FFFFFFF •Audio Internal L-R Freq Set the output frequency. The max value differs by the setting of AudioSampleFreq item. 32kHz : 10kHz 44.1kHz : 22.05kHz 48kHz : 24kHz
	YPbPr Matrix	Set the value of YPbPr. Input the appropriate number.
	SyncPolarity	Display NEGA and POSI that is set in the part of "OUTPUT".
	Repetition	Set the value of the Repetition. Set among 1 to 10.
	InfoFrame Setting button	InfoFrame setting screen is displayed.
	ACP Setting button	ACP setting screen is displayed.
	AFD Setting button	AFD setting screen is displayed.

InfoFrame data setting screen

A setting screen is a thing at the time of VG-849 selection.

InfoFrame Setting

AVI
 ON OFF
 Type Version
 Scan Info.
 Bar Info.
 Active Format Info. No Data Valid
 RGB/YCbCr
 Active Aspect Ratio
 Picture Aspect Ratio
 Scaling
 Colorimetry
 Video Code
 Repetition
 End of Top Bar
 Start of Bottom Bar
 End of Left Bar
 Start of Right Bar

SPD
 ON OFF
 Type Version
 Vendor Name
 Product Descript.
 Source Device

Audio
 ON OFF
 Type Version
 Channel Count
 Coding Type
 Sample Size
 Sample Freq.
 Channel/Speaker Allocation
 Level Shift dB
 Down-mix Inhibit Permitted Prohibited

MPEG
 ON OFF
 Type Version
 Bit Rate M K Hz
 Frame
 Field Repeat New Repeated

No.	Item name	Details
	AVI	<p>ON/OFF Select ON or OFF of InfoFrameAVI.</p> <p>Type Display the type of InfoFrameAVI.</p> <p>Version Set the version of InfoFrameAVI. Select either 1 or 2.</p> <p>ScanInfo Set the ScanInfo. Select from NoData, Overscanned, or Underscanned.</p> <p>BarInfo Set about the BarInfo. Select from NotValied, Vert, Horiz or Vert&Horiz.</p> <p>Scaling Set about the Scaling. Select from unknown, Vert, Horiz or Vert&Horiz.</p> <p>ActiveFormatInfo Set about the ActiveFormatInfo. Select either NoData or Valid.</p> <p>RGB/YCbCr Set either RGB or YcbCr. Select from RGB, YCbCr422 or YCbCr444.</p> <p>ActiveAspectRatio Set the active aspect ratio. Select from Same, 4:3, 16:9 or 14:9.</p> <p>PictureAspectRatio Set the picture aspect ratio. Select NoData, 4:3 or 16:9.</p> <p>Colorimetry Set about the Colorimetry. Select from NoData, SMPTE, or ITU709.</p> <p>VideoCode Set the VideoCode. Select between 0 and 34</p> <p>Repetition Set about the Repetition. Select between 1 and 10.</p> <p>End of Top Bar Set the Top Bar. Select between 1 and 65535.</p> <p>Start of Bottom Bar Set the Bottom Bar. Select between 1 and 65535.</p> <p>End of Left Bar Set the Left Bar. Select between 1 and 65535.</p> <p>Start of Right Bar Set the Right Bar. Select between 1 and 65535.</p>
	SPD	<p>ON/OFF Select ON or OFF of InfoFrameSPD.</p> <p>Type Display the type of InfoFrameSPD.</p> <p>Version Set the version of InfoFrameSPD. One version is fixed.</p> <p>VendorName Set the VendorName. Input using ASCII letters.</p> <p>ProductDescript Set the ProductDescript. Input using ASCII letters.</p> <p>SourceDevice Set the SourceDevice. Select from unknown, DigiSTB, DVD, DVHS, HDD, DVC, DSC, CD, Game or PC.</p>
	Audio	<p>ON/OFF Select ON or OFF of InfoFrameAudio.</p> <p>Type Display the type of InfoFrameAudio.</p> <p>Version Set the version of InfoFrameAudio. One version is fixed.</p> <p>Channel Count Set the channel counting. Select from Refer, 2ch, 3ch, 4ch, 5ch, 6ch, 7ch or 8ch.</p> <p>CodingType Set the coding type. Select from Refer, IEC60958, AC3, MPEG1, MP3, MPEG2, AAC, DTS or ATRAC.</p> <p>SampleSize Set the sampling size. Select from Refer to stream, 16bit, 20bit or 24bit.</p> <p>SampleFreq Set the sampling frequency. Select from Refer to stream, 32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz or 192kHz.</p> <p>Channel/Speaker Allocation Set the speaker channel. Set between 0 and 31.</p>

		<p>LevelShift Set the level shift. Set between 0 and 15.</p> <p>Down-mixInhibit Select "Permitted" or "Prohibited" of using DownMix.</p>
	MPEG	<p>ON/OFF Select ON or OFF of InfoFrameMPEG.</p> <p>Type Display the Type of InfoFrameMPEG.</p> <p>Version Set the version of InfoFrameMPEG. One version is fixed.</p> <p>BitRate Set the BitRate within the range of 0 to 4294967295. (4294M967K295Hz)</p> <p>Frame Set about the Frame. Select from unknown, I Picture, B Picture or P Picture.</p> <p>FieldRepeat Set about FieldRepeat. Select either New or Repeated.</p>

ACP data setting screen

A setting screen is a thing at the time of VG-849 selection.

The screenshot shows the ACPForm application window with the following settings:

- ACP Packet:**
 - ON (selected) / OFF
 - ACP Type: Generic Audio
 - DVD-Audio Type Dependent Generation: 1
 - Copy Permission: 0
 - Copy Number: 0
 - Quality: 0
 - Transaction: 0
 - Count_A: 255
 - Count_S: 255
 - Count_U: 255
 - Q_A: 1, Q_S: 1
 - Q_U: 1
 - Move_A: 1, Move_S: 1
 - Move_U: 1
- ISRC1 Packet:**
 - ON (selected) / OFF
 - ISRC Cont: 0
 - ISRC Valid: 0
 - ISRC Status: Starting
 - Validity information: No Validity
 - Catalogue code (UPC/EAN #1-#13): 0000000000000
 - Country code (ISRC #1-#2): 00
 - First owner code (ISRC #3-#5): 000
 - Year of recording code (ISRC #6-#7): 00
 - Recording (item) code (ISRC #8-#12): 00000
- ISRC2 Packet:**
 - ON / OFF (selected)

A "Close" button is located at the bottom right of the window.

No.	Item name	Details
	ACP Packet	<p>ON/OFF Select ON or OFF of ACP.</p> <p>ACP Type ACP type setup. Please make a selection from Generic Audio, IEC60958, DVD Audio, or Reserved for SACD.</p> <p>DVD-Audio Type Dependent Generation DVD-Audio Type Dependent Generation setup. Only one way to choose.</p> <p>Copy Permission Copy Permission setup. Please make a selection from 0, 1, 2, or 3. * When ACP Type is set to DVD Audio, it can be selected.</p> <p>Copy Number Copy Number setup. Please make a selection from 0, 1, 2, 3, 4, 5, 6, or 7. * When Copy Permission is set to 2, it can be selected.</p> <p>Quality Quality setup. Please make a selection from 0, 1, 2, or 3. * When Copy Permission is set to two, it can be selected.</p> <p>Transaction Transaction setup. Please make a selection from 0 or 1. * When Copy Permission is set to two, it can be selected.</p> <p>Count_A Count_A setup. Please make a selection from 0 to 255.</p> <p>Count_S Count_S setup. Please make a selection from 0 to 255.</p> <p>Count_U</p>

		<p>Count_U setup. Please make a selection from 0 to 255.</p> <p>Q_A Q_A setup. Please make a selection from 0 or 1.</p> <p>Q_S Q_S setup. Please make a selection from 0 or 1.</p> <p>Q_U Q_U setup. Please make a selection from 0 or 1.</p> <p>Move_A Move_A setup. Please make a selection from 0 or 1.</p> <p>Move_S Move_S setup. Please make a selection from 0 or 1.</p> <p>Move_U Move_U setup. Please make a selection from 0 or 1.</p>
	ISRC 1	<p>ON/OFF Select ON or OFF of ISRC1.</p> <p>ISRC Cont ISRC Cont setup. Please make a selection from either 0 or 1.</p> <p>ISRC Valid ISRC Valid setup. Please make a selection from either 0 or 1.</p> <p>ISRC Status ISRC Status setup. Please make a selection from Starting, Intermediate, or Ending.</p> <p>Validity Information Validity Information setup. Please make a selection from No Validity, ISRC, UPC/EAN, or UPC/EAN&ISRC.</p> <p>Catalogue Code (UPC/EAN #1-#13) Catalogue Code setup. Please setup using only 13 characters.</p> <p>Country Code (ISRC #1-#2) Country Code setup. Please setup using only 2 alphanumeric characters.</p> <p>First owner Code (ISRC #3-#5) First owner Code setup. Please setup using 3 alphanumeric characters.</p> <p>Year of Recording Code (ISRC #6-#7) Year of Recording Code setup. Please setup using 2 characters.</p> <p>Recording (item) Code (ISRC #8-#12) Recording (item) Code setup. Please setup using 5 characters.</p>
	ISRC 2	Select ON or OFF of ISRC2.

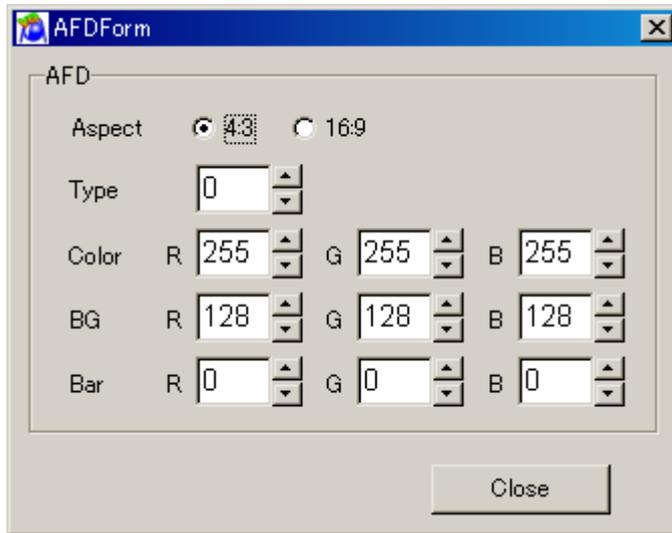
CEC data setting screen

A setting screen is a thing at the time of VG-849 selection.

No.	Item name	Details
	CEC Mode setting	Set CEC Mode. Select among "Monitor", "Sending" and "Respond".
	VG Logical Address	VG Logical Address From which device the command is transmitted is set. Set the value from 0 to F. * VG Logical Address and TX Initiator are adjusted each other. When either value is changed, the other set value is changed.
	Transmission command is set	TX Initiator From which device the command is transmitted is set. Set the value from 0 to F. * VG Logical Address and TX Initiator are adjusted each other. When either value is changed, the other set value is changed. TX Destination To which device the command is transmitted is set. Set the value from 0 to F. Op Code Set Op Code of the command. Set the value from 00 to FF. ParameterNum Set the number of Parameter. Set the value from 0 to 14. Parameter Set the number of Parameter. Set the value from 00 to FF in each Parameter.
	Receiving command is set.	RX Initiator From which device the command is transmitted is set. Set the value from 0 to F. RX Destination To which device the command is transmitted is set. Set the value from 0 to F. Op Code Set Op Code of the command. Set the value from 00 to FF. ParameterNum Set the number of Parameter. Set the value from 0 to 14. Parameter Set the number of Parameter. Set the value from 00 to FF in each Parameter.

ADF data setting screen

A setting screen is a thing at the time of VG-849 selection.



The "EIA/CEA-861B standard" aspect ratio evaluation pattern can be set as optional pattern 1F. The detailed settings of optional pattern 1F are shown below.

Aspect Mode

For setting the actual aspect ratio.

AFD Aspect

For setting CodeFrame of the AFD which is defined by the EIA/CEA-861B standard.

AFD Type

For setting the number of the AFD which is defined by the EIA/CEA-861B standard.

AFD Color

For setting the color used for the circle of the optional pattern 1F.

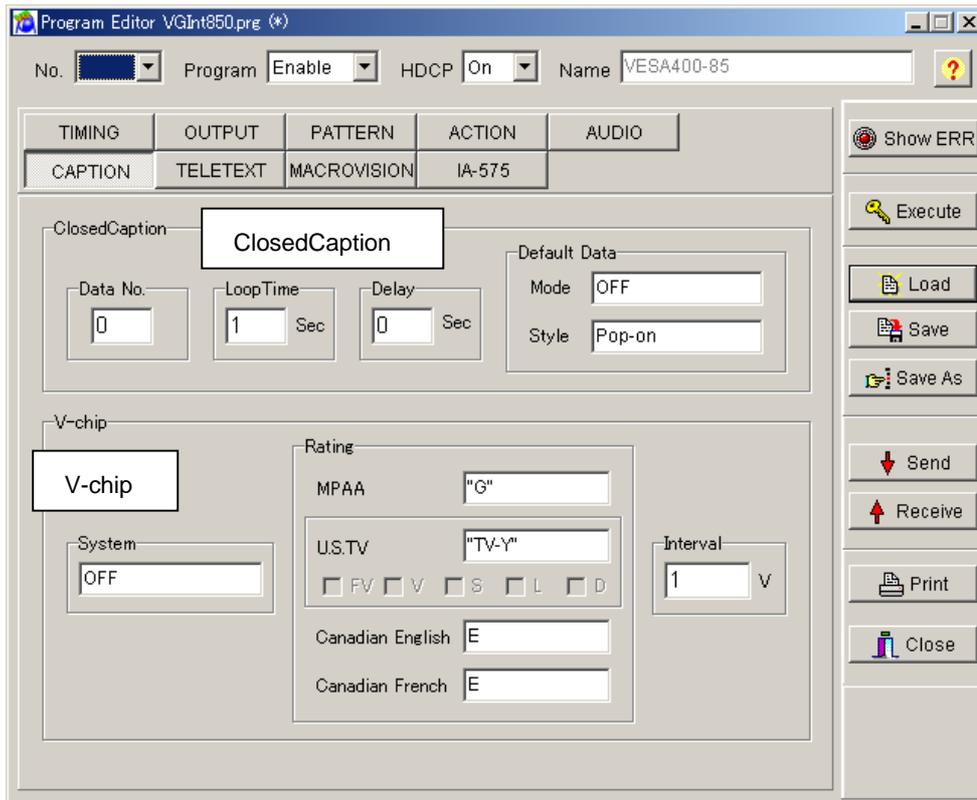
AFD BG

For setting the color of the background used for the circle of the optional pattern 1F.

AFD Bar

For setting the color of the SideBar and LetterBox of the optional pattern 1F.

ClosedCaption/V-chip data setting screen



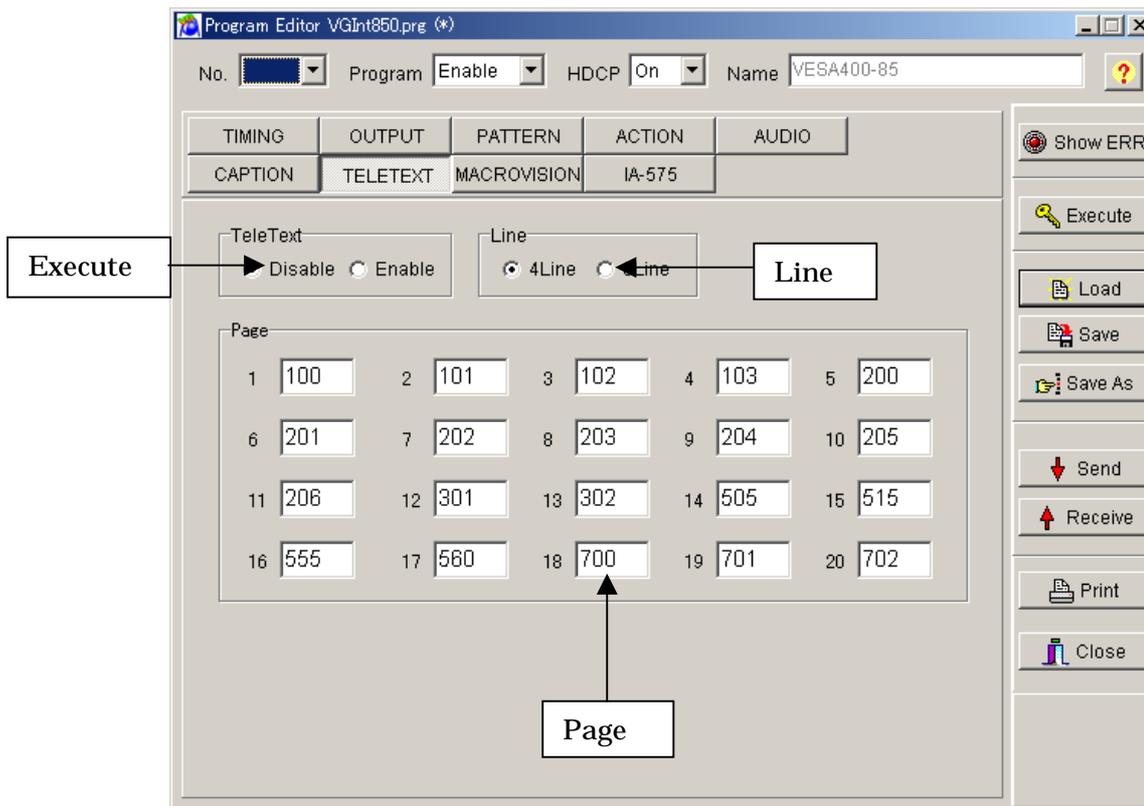
V-chip

V-chip data is set up. Please refer to a "2.18. ClosedCaption/V-chip data transmission tool" for details.

ClosedCaption

Caption data is set up. Please refer to a "2.18. ClosedCaption/V-chip data transmission tool" for details.

Teletext data setting screen



Execute

Select ON or OFF for the output

Line

Set the teletext data transmission mode.

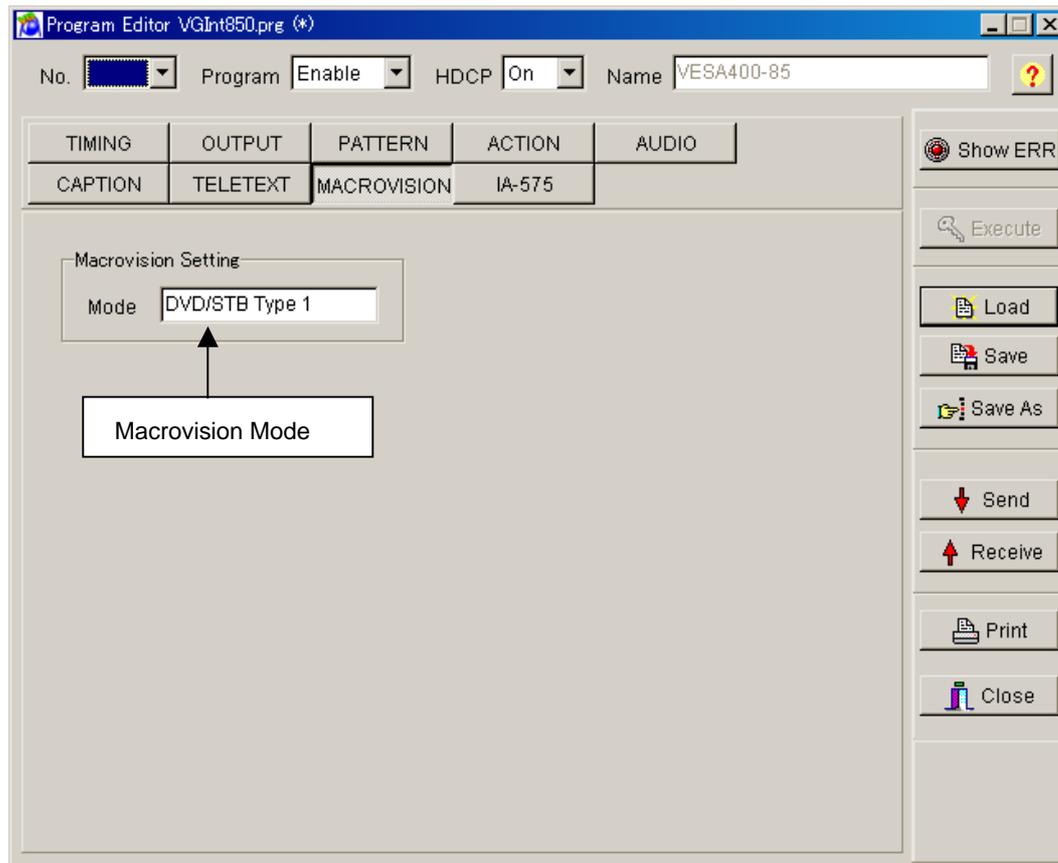
- 4line : Four lines are set as the mode for transmitting the teletext data.
Display lines : Field1 = 20, 21. Field2 = 333, 334
- 8line : Eight lines are set as the mode for transmitting the teletext data.
Display lines : Field1 = 13, 14, 20, 21. Field2 = 326, 327, 333, 334

Page

This is used to set the pages for each of the channels. The contents of a page are as being shown below. If a page with any other number is set, only the page number will be displayed.

Page	Contents
100	Index Page
101	Test Page
102	Newsflash
103	Subtitle
200	Character Set(English)
201	Character Set (German)
202	Character Set (Swedish/Finnish/Hungarian)
203	Character Set (Italian)
204	Character Set (French)
205	Character Set (Portuguese/Spanish)
206	Character Set (Czech/Slovak)
301	Colours
302	White Flat
505	Clock Cracker
515	Multi Page
555	Test Pattern1
560	Test Pattern2
580	Test Pattern3

Macrovision data setting screen



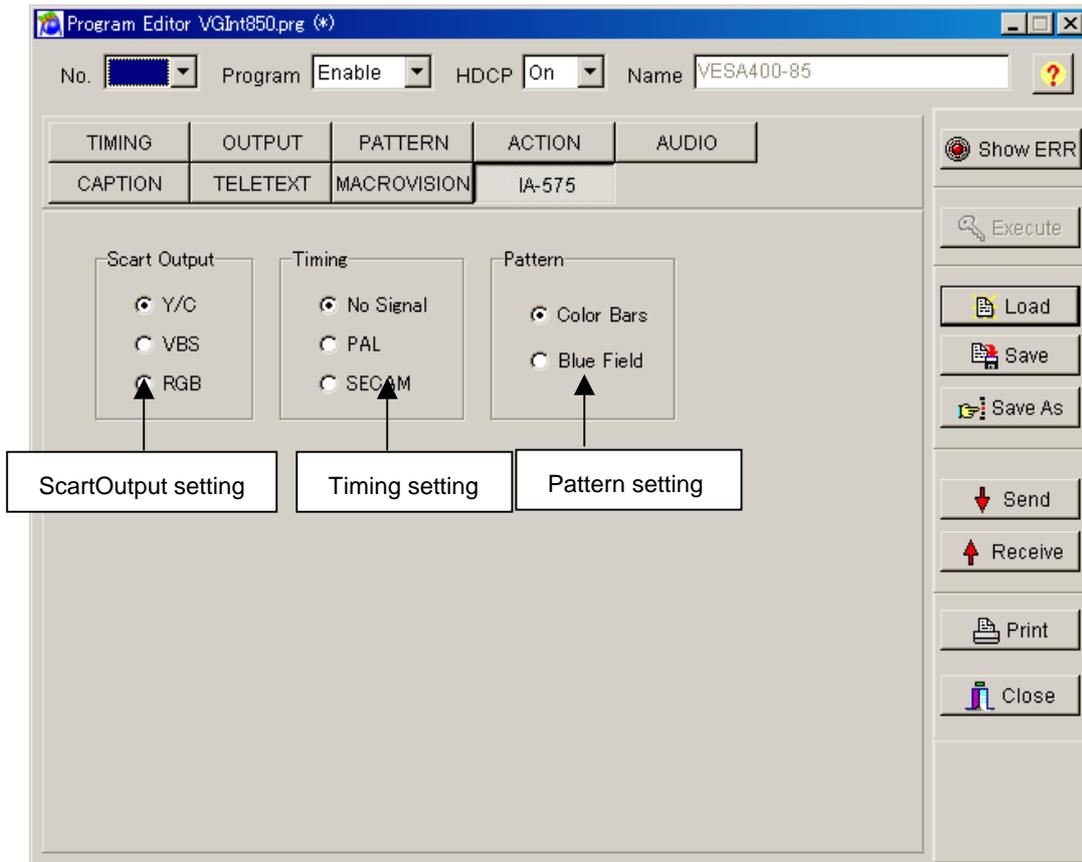
Mode

The output mode of a Macrovision is set up. The modes which can be set up for every setting timing differ.

The mode which can be set up for every timing.

Timing	Mode
NTSC-M	OFF
	DVD/STB Type 1
	DVD/STB Type 2
	DVD/STB Type 3
	VHS USA
	VHS US obs.
NTSC-J	OFF
	DVD/STB Type 1
	DVD/STB Type 2
	DVD/STB Type 3
	VHS Japan 1
	VHS Japan 2
NTSC-443	OFF
	DVD/STB
PAL-60	OFF
	DVD/STB
PAL-M	OFF
	DVD/STB
PAL	OFF
	DVD/STB
	VHS
PAL-N	OFF
	DVD/STB
	VHS
PAL-Nc	OFF
	DVD/STB
	VHS
SECAM	OFF
	DVD/STB
	VHS

IA-575 data setting screen



ScartOutput

The IA-575 can switch its output signals to VBS output, Y/C output or RGB output signals.

Timing

When a timing system other than one supported by the IA-575 has been selected, it is possible to specify the timing system which are to be output from the IA-575.

Pattern

When a timing system other than one supported by the IA-575 has been selected, it is possible to specify the pattern which are to be output from the IA-575.

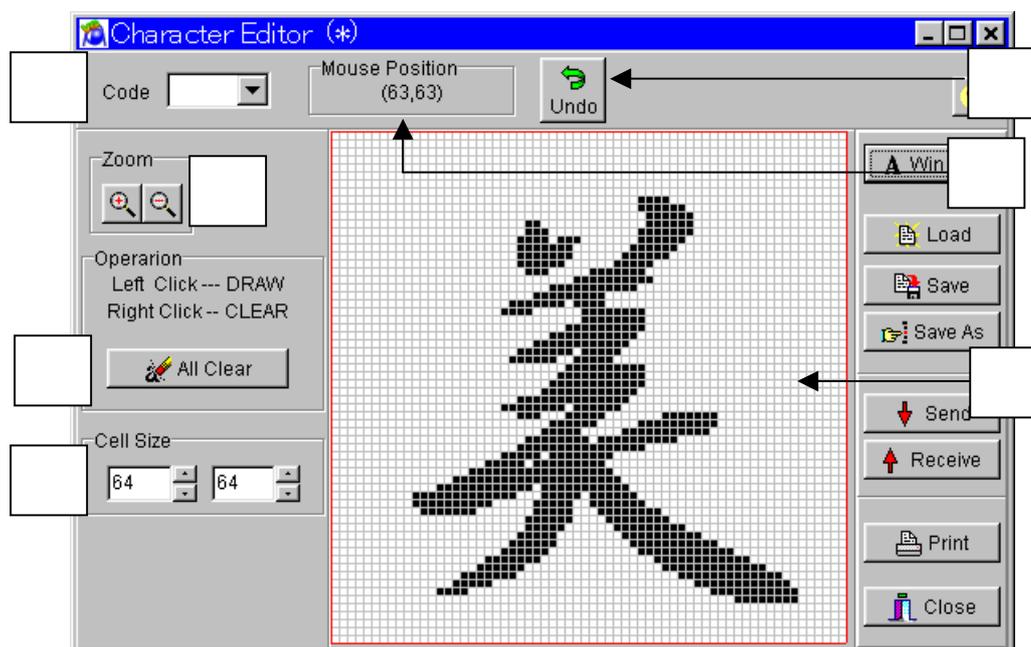
2.6. Creating and editing the user characters

This section describes how the VG's user characters (hereafter referred to as the "characters") are set. The VG characters can be created and edited, edited characters can be sent to the VG and registered on the panel ROM or memory card, and characters from the VG can be received.

2.6.1. Startup method

Click the [Char] button of "VGBase" to start up the "Character Editor."

2.6.2. Window screen and description



No.	Item name	Details
	Code	The codes of the characters registered in the VG appear here.
	Zoom	These buttons are used to enlarge or reduce what is displayed inside the editing area.  : This is used to enlarge what is displayed inside the editing area.  : This is used to reduce what is displayed inside the editing area.
	All Clear	This button is used to clear the entire character in the editing area.
	Cell Size	The editing area cell size can be set here. Either select the size from Auto of the radio button or set a customized size.
	Mouse Position	The position of the mouse inside the editing area appears here.
	Undo	This button is used to undo the last operation.
	Editing area	Position the mouse cursor in the editing area. If the right button is now clicked, the mouse cursor position is filled in with black; if the left button is clicked, it is filled in with white. This position corresponds to one dot of the character font. In this way, characters can be created visually.

2.6.3. Operation methods

(1) Loading the file

Before creating new characters, proceed with "Creating and editing the character data" in 2) below.

- 1) Press the [Load] button to open the "Load File" file selection dialog box.
- 2) Select the file. When [Display Image] is checked, the selected file is previewed.
- 3) Click the [OK] button. The character of the selected file is now displayed in the editing area.
 - If the layout has been set
The character code registered in the layout is displayed at [Code].
 - If the layout has not been set
[Code] is cleared.

(2) Creating and editing the character data

- 1) If the grid section of the editing area is clicked with the right button of the mouse, it is set to ON; if it is clicked with the left button, it is set to OFF. (One grid section in the editing area corresponds to one dot of the character font. In the editing area, the ON state is indicated in black and the OFF state in white.)
- 2) To set a multiple number of consecutive dots, drag the mouse and all the dots of the character along the line of movement will be set to ON if the right button of the mouse is clicked and to OFF if the left button is clicked.
- 3) To clear the entire character created in the editing area, click the [All Clear] button.
- 4) To undo the last operation, click the [Undo] button.
- (*) The numbers shown by [Cell Size] serve as a general guideline when editing by changing the line color of the set position.
- (*) The position of the cursor in the editing area is indicated at [Mouse Position].

(3) Loading the Windows font data

The font data already installed in Windows is converted into the character format and loaded.

- 1) Click the [Win Font] button. The "Select Windows Font" font selection dialog box appears.
- 2) Specify the text to be loaded in [Text].
- 3) To change the text font, size or style, click the [Set Font...] button.
- 4) To change the position or size of the text display, use [Start Position] or [Size].
- 5) To specify alignment of the text position, use [Align].
- 6) Click the [OK] button. The specified text is now displayed in the editing area.

(4) Saving the file

The displayed data is saved in the file.

Click the [Save] button. → The data is saved in the selected file and any existing data in that file is overwritten.

Click the [Save As] button. → The data is saved in a new file.

(*) If [Display Image] is checked, the selected file is previewed.

(5) Sending the characters

- 1) Click the [Send] button. The "Send to VG" code selection dialog box appears.
- 2) Set the character code (0xE0 to 0xEF in hexadecimal format).
- 3) Click the [OK] button. The character is now sent to the VG and registered. (The code shown at [Code] now changes to that of the sent character.)

(6) Receiving the characters

- 1) Click the [Receive] button. The "Receive from VG" code selection dialog box appears.
- 2) Set the character code (0xE0 to 0xEF in hexadecimal format).
- 3) Click the [OK] button. The reception of the character is now started.
- 4) The received character is displayed in the editing area. (The code shown at [Code] now changes to that of the received character.)

Characters can be received from old VG model but they cannot be sent to one.

(7) Printing the characters

- 1) Click the [Print] button to print the characters which have been created.
- 2) The "Print" dialog box appears. Set the margins here.
- 3) Click the [OK] button. The displayed character is now printed.
- 4) To change the printer which has been set, click the [Set Printer...] button.
- 5) The printer setting dialog box appears. Proceed with the printer settings. For details on how the items on this dialog box are set, refer to the instruction manual for Windows or for the printer which will be used.

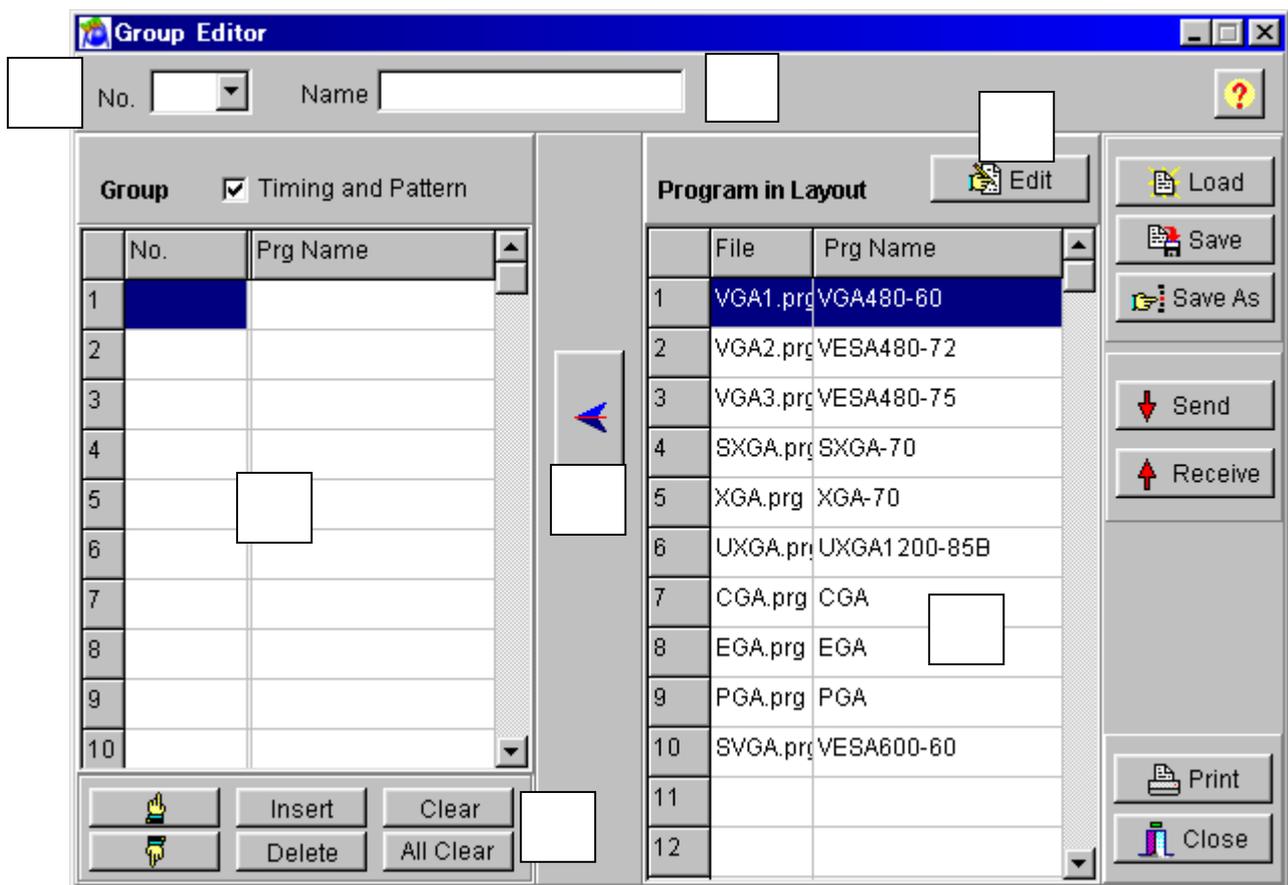
2.7. Creating and editing the group data

This section describes how the VG's group data is set. The VG group data can be created and edited, edited group data can be sent to the VG and registered on the panel ROM or memory card, and group data from the VG can be received. Different program display screens are displayed depending on the VG model which is connected.

2.7.1. Startup method

Click the [Group] button of "VGBase" to start up the "Group Editor."

2.7.2. Window screen and description



No.	Item name	Details
	No	The number of the group data registered in the VG appears here.
	Name	The name of the group data registered in the VG appears here.
	Edit	When this button is clicked, the "Program Layout Editor" program data registration dialog box appears.
	Group	The loaded program data is displayed here.
	Cell editing buttons	<p>↑, ↓: The [up] button and [down] button enable the group data to be scrolled up and down.</p> <p>[Insert]: This button makes it possible to scroll down all the lines below the one selected and insert a blank line.</p> <p>[Delete]: This button is used to delete lines. The group data below a deleted line moves up to fill the gap left.</p> <p>[Clear], [All Clear]: These buttons are used to delete the group data.</p>
	Program in Layout	The program data registered in the layout is displayed here.
	Set	This button is used to register the data, which is displayed on the program data list, onto the group data list.

2.7.3. Operation methods

(1) Loading the file

Before creating new group data, proceed with "Creating and editing the group data" in 2) below. The group data is loaded from one of the files which have been saved.

- 1) Press the [Load] button to open the "Load from File" file selection dialog box.
- 2) Select the file, and click the [OK] button.
- 3) The data of the selected file is now displayed on the [Group] group data list.
 - If the layout has been set
The number of the group data registered in the layout is displayed at [No.].
 - If the layout has not been set
[No.] is cleared.

(2) Creating and editing the group data

- 1) When the "Group Editor" is started up, the program registered in the layout is displayed on the [Program in Layout] program data list.
- 2) Select the program data to be registered from [Program in Layout].
- 3) Select the line to be set from among the lines on the [Group] group data list, and click the [-] (left arrow) button. The program data number ([No.]) and program name ([Prg Name]) are set and displayed on the line selected in [Group]. (When a multiple number of programs has been selected, lines for the data to be registered are added below the line selected on the group data list.)
- 4) Change the group data which has been set in [Group].
To move the group data up or down, click the [up] or [down] button.
 - To delete the group data, click the [Clear] button or [All Clear] button.
 - Use the [Delete] button to delete a line, after which the group data below the deleted line moves up to fill the gap left.

(*) If no data files in the layout have been loaded, no programs are displayed in [Program in Layout]. Input and set only the program data numbers. As above, select the line in [Program in Layout], and click the [-] button. Only the program data number is now set. Alternatively, using the mouse, click the [No.] field of the group data list where the program data number is to be input. The number can be keyed in.

(3) Saving the file

The displayed data is saved in the file.

Click the [Save] button. → The data is saved in the selected file and any existing data in that file is overwritten.

Click the [Save As] button. → The data is saved in a new file.

(*) The group data name can be set by inputting it into [Name] of the "Group Editor." This name is stored in the file when a panel ROM is used but it will not be sent to the VG.

(4) Sending the group data

1) Click the [Send] button. The "Send to VG" code selection dialog box appears.

2) Set the group number (1 to 99).

3) Click the [OK] button. The group data is now sent to the VG and registered. (The number of the data sent now replaces the previous number appearing in [No.])

4) The group data name can be set by inputting it into [Name] on the group data setting tab of the group data setting window. This name is stored in the file when a panel ROM is used but it will not be sent to the VG.

(5) Receiving the group data

1) Click the [Receive] button. The "Receive from VG" number selection dialog box appears.

2) Set the group number (1 to 99).

3) Click the [OK] button. The reception of the group data is now started. (The number of the received group data now replaces the previous number appearing in [No.])

(*) When program data is received from the panel ROM (HN58C65P only), it has a 2-digit number.

Group data can be received using an old VG model but it cannot be sent to one.

(6) Printing the group data

1) Click the [Print] button to print the group data which has been created.

2) The "Print" dialog box appears. Set the margins here.

3) Click the [OK] button. The displayed data is now printed.

4) To change the printer which has been set, click the [Set Printer...] button.

5) The printer setting dialog box appears. Proceed with the printer settings. For details on how the items on this dialog box are set, refer to the instruction manual for Windows or for the printer which will be used.

(7) Registering the program

The program data files in the directory are registered on the layout data list. (If layout data files have not been loaded, they cannot be registered.)

1) Click the [Edit] button.

2) The "Program Layout Editor" program data registration dialog box appears. For details on the registration method, refer to "Selecting and editing the layout data files" in Section 3-11.

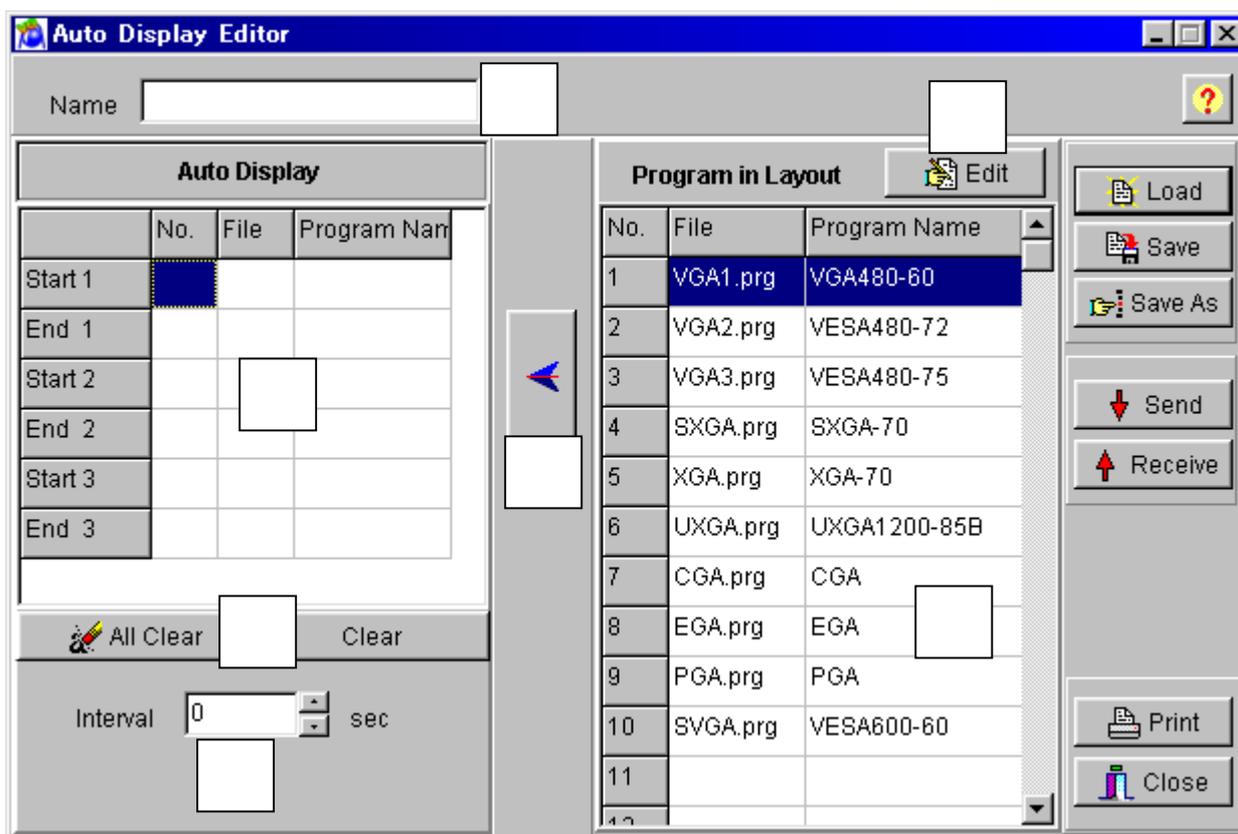
2.8. Creating and editing the auto display data

This section describes how the VG's auto display data is set. The VG auto display data can be created and edited, edited auto display data can be sent to the VG and registered on the panel ROM or memory card, and auto display data from the VG can be received.

2.8.1. Startup method

Click the [Auto Disp] button of "VGBase" to start up the "Auto Display Editor."

2.8.2. Window screen and description



No.	Item name	Details
	Name	The name of the auto display data is set here.
	Auto Display	The auto display data which has been set is displayed here.
	All Clear/Clear	These buttons are used to clear the program data on the auto display data list.
	Interval	The interval of the auto display data is set here.
	Edit	When this button is clicked, the "Program Layout Editor" program data registration dialog box appears.
	Program in Layout	The program data registered in the layout is displayed here.
	Set	This button is used to register the selected program data on the [Auto Display] line selected.

2.8.3. Operation methods

(1) Loading the file

Before creating new auto display data, proceed with "Creating and editing the auto display data" in (2) below.

The auto display data is loaded from a file in which it was saved.

- 1) Click the [Load] button. The "Load File" file selection dialog box now appears.
- 2) Select the file, and click the [OK] button. The auto display data of the selected file is now displayed on the [Auto Display] auto display data list.

(2) Creating and editing the auto display data

- 1) Select the program data to be set from the [Program in Layout] program data list.
 - 2) Before proceeding any further, select the line on the [Auto Display] auto display data list to be set for registering the data.
 - 3) Click the [←] button, and register the selected program data on the [Auto Display] line selected.
 - To clear the auto display data, click the [Clear] button or [All Clear] button.
 - 4) Set the number of interval seconds in [Interval].
- (*) If no data files in the layout have been loaded, no programs are displayed in [Program in Layout]. Input and set only the program data numbers. As above, select the line in [Program in Layout], and click the [←] button. Only the program data number is now set. Alternatively, use the mouse to click the [No.] field of the auto display data list where the program data number is to be input. The number can now be keyed in.
- (*) In registering the auto display data, set the program data for both [Start] and [End]. Set the program data from the top without leaving any gaps. (In other words, do not enter a setting for [Start] or [End] only or leave any blank lines between data settings.)

(3) Saving the file

The displayed data is saved in the file.

Click the [Save] button. ⇒ The data is saved in the selected file and any existing data in that file is overwritten.

Click the [Save As] button. ⇒ The data is saved in a new file.

(*) The auto display data name can be set by inputting it into [Name] of the "Auto Display Editor." This name is stored in the file but it will not be sent to the VG.

(4) Sending the auto display data

When the [Send] button is clicked, the sending of the auto display data is started. The name which was input in [Name] is stored in the file but it will not be sent to the VG.

(5) Receiving the auto display data

Click the [Receive] button. The auto display data is now received. [Name] is cleared since the name of the auto display data is not registered in the VG.

(*) When auto display data is received from the panel ROM (HN58C65P only), it has a 2-digit number.

Auto display data can be received using an old VG model but they cannot be sent to one.

(6) Printing the auto display data

- 1) Click the [Print] button.
- 2) The "Print" dialog box appears. Set the margins here.
- 3) Click the [OK] button. The displayed data is now printed.
- 4) To change the printer which has been set, click the [Set Printer...] button.
- 5) The printer setting dialog box appears. Proceed with the printer settings. For details on how the items on this dialog box are set, refer to the instruction manual for Windows or for the printer which will be used.

(7) Registering the program

The program data files in the data directory are registered on the layout data list. If layout data files have not been loaded, they cannot be registered.

- 1) Click the [Edit] button.
- 2) The "Program Layout Editor" program data registration dialog box appears. For details on the registration method, refer to "Selecting and editing the layout data files" in Section 3-11.

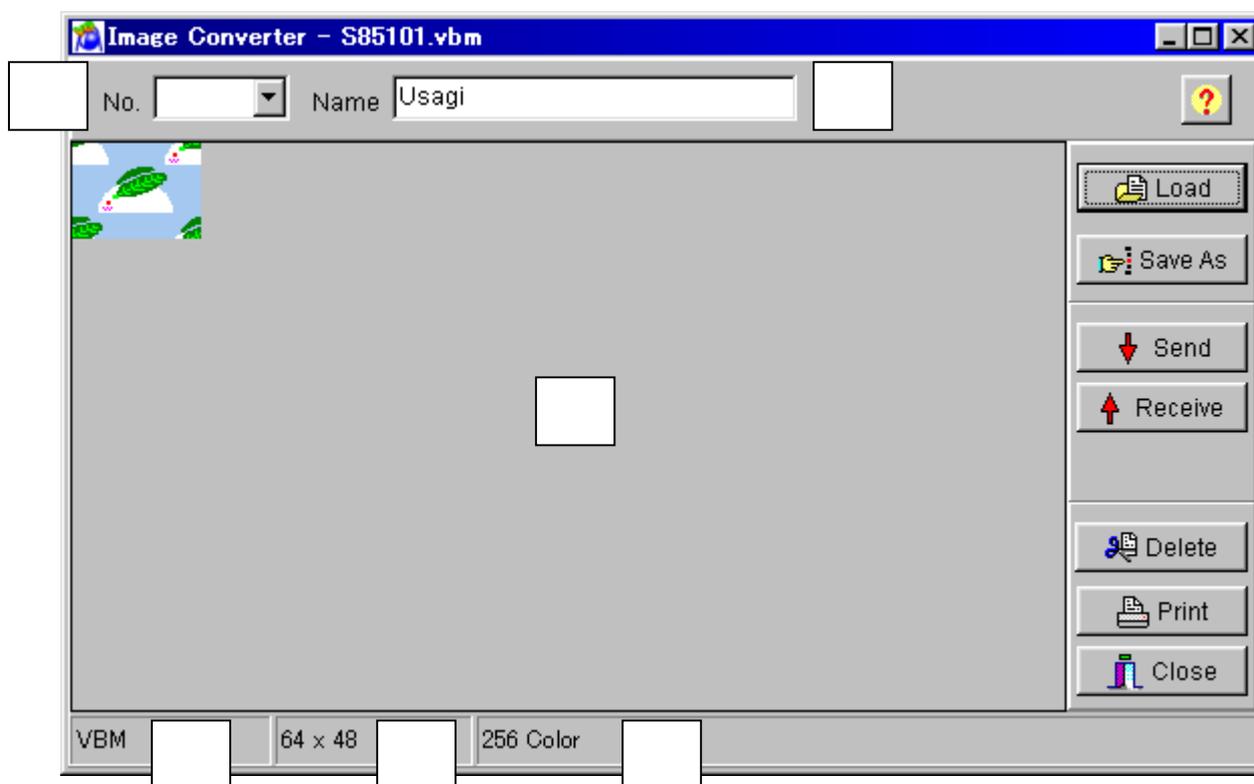
2.9. Converting the image data

This section describes how the VG's image data is set. BMP data or JPG data can be converted into VBM data for use by the VG, VBM data can be sent to the VG and registered on the memory card, VBM data from the VG can be received, and this data can be saved as VBM files.

2.9.1. Startup method

Click the [Image] button of "VGBase" to start up the "Image Converter."

2.9.2. Window screen and description



No.	Item name	Details
	No	The number of the image data registered in the VG appears here.
	Name	The name of the image data displayed appears here.
	Image display window	The image data is displayed here.
	Image type	The displayed data image type is shown here.
	Image size	The displayed data size is shown here.
	Number of image colors	The number of colors of the displayed data is shown here.

2.9.3. Operation methods

(1) Loading the image file

BMP files, JPG files and VBM files are loaded and displayed.

- 1) Click the [Load] button.
- 2) The "Load Image File" file selection dialog box is opened. Select the file type (BMP, JPG or VBM data), and select the file. If [Display Image] is checked, the selected file is previewed.
- 3) Click the [OK] button to load the selected image file.
 - If the layout has been set
In the case of a VBM file, the number of the VBM data registered in the layout is displayed at [No.]. In the case of any other type of file, [No.] is cleared.
 - If the layout has not been set
[No.] is cleared.

(2) Saving a VBM file

The displayed data is saved as a VBM file. It cannot be saved as a BMP or JPG file.

- 1) Click the [Save As] button.
 - 2) The "Save VBM File" file selection dialog box appears.
 - 3) Input the filename, and click the [OK] button. The displayed VBM data is now saved in a new file.
- (*) The image data name can be set by inputting it into [Name].

(3) Sending the VBM data

The displayed data is converted into VBM data and sent to the VG.

- 1) Click the [Send] button. The "Send to VG" number selection dialog box appears.
 - 2) Set the number (1 to 64) or optional code (0x80 to 0xBF). (Both of these are supported. When data is set in either the number or the code, the corresponding data will be set in the other.) (The number of the sent VBM data now replaces the previous number appearing in [No.])
 - 3) Click the [OK] button. The VBM data is now sent to the VG and registered.
- (*) The image data name can be set by inputting it into [Name] on the VBM display screen.

(4) Receiving the VBM data

The VBM data is received from the VG and displayed.

- 1) Click the [Receive] button. The "Receive from VG" number selection dialog box appears.
- 2) Set the number (1 to 64) or optional code (0x80 to 0xBF). (Both of these are supported. When data is set in either the number or the code, the corresponding data will be set in the other.) Click the [OK] button.
- 3) The VBM data is received and displayed. (The number of the received VBM data sent now replaces the previous number appearing in [No.])

VBM data can be received using an old VG model but they cannot be sent to one.

(5) Printing the image data

- 1) Click the [Print] button.
- 2) The "Print" dialog box appears. Set the margins here.
- 3) Click the [OK] button. The displayed data is now printed.
- 4) To change the printer which has been set, click the [Set Printer...] button.
- 5) The printer setting dialog box appears. Proceed with the printer settings. For details on how the items on this dialog box are set, refer to the instruction manual for Windows or for the printer which will be used.

2.10. Creating and editing the optional patterns

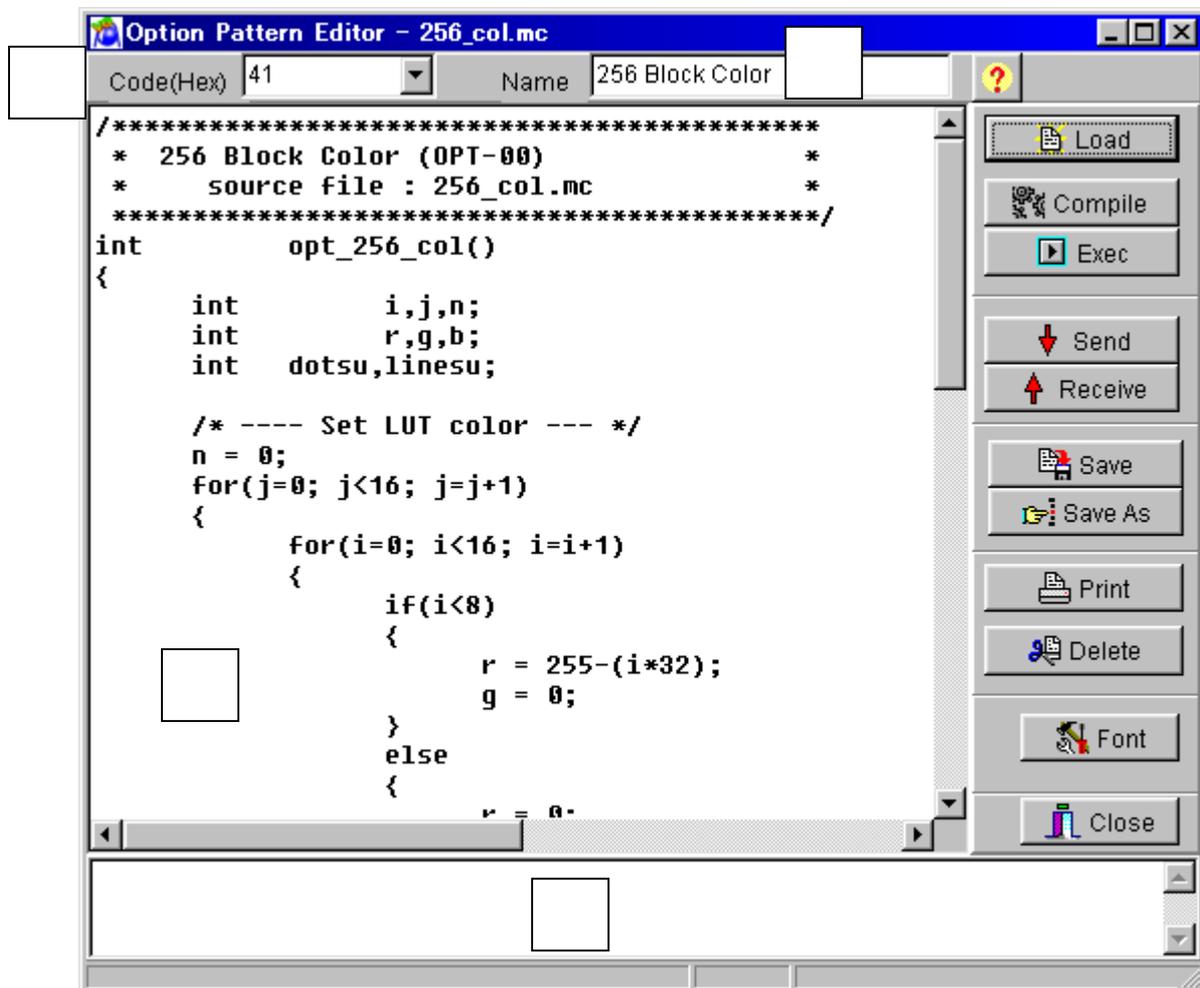
This section describes how the VG user-created optional patterns (hereafter abbreviated to "optional patterns") are set. The VG optional patterns can be created and edited, edited optional pattern source codes can be compiled, optional pattern data can be sent to the VG and registered on the memory card, and optional patterns from the VG can be received.

2.10.1. Startup method

Click the [Opt-Ptn] button of "VGBase" to start up the "Option Pattern Editor."

2.10.2. Window screen and description

Compilation screen



No.	Item name	Details
	Code	The code registered in the layout data appears here.
	Name	The name of the displayed optional pattern appears here.
	Editing screen	The source codes of the optional patterns are created, changed and displayed on this screen.
	Compiling screen	Messages appear here during the compiling process.

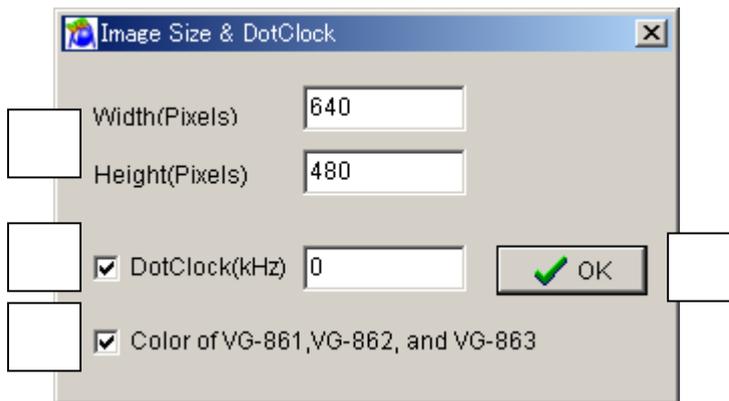
Simulation Window



If user option pattern data has different planes, such as 1-bit, 8-bit and Window plane, it takes certain amount of time to display Simulation Window.

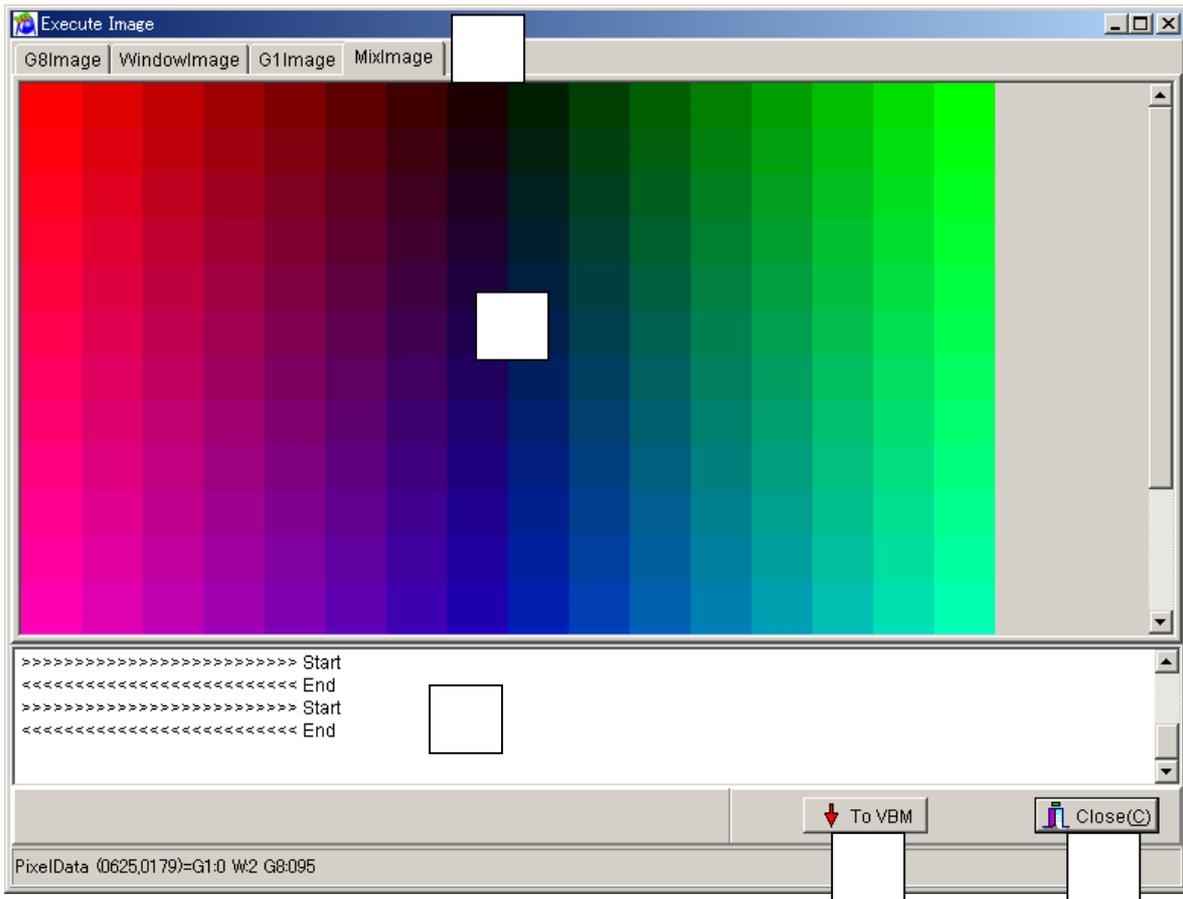
• Resolution Input screen

By pressing “Exec” button, the Resolution Input screen is displayed.



No.	Item	Description
	Resolution	Input the resolution of the pattern that is simulated. Simulation screen is displayed according to the input resolution.
	Dot Clock value	Set the Dot Clock value when using the function “vs_InqStat”. Set by the unit of kHz.
	LUT value for VG-861, 862 and 863	Set LUT value of opt_setcolor_default as the LUT value for VG-861, 862 and 863. * Please do not use it usually.
	OK button	Simulation screen is displayed

- Simulation screen



No.	Item	Description
	Plane switching	Simulated pattern can be displayed by each plane, such as 8-bit, Window, 1-bit and Mix.
	Output screen	Simulated pattern is displayed.
	Compile screen	Message for compiling is displayed.
	VBM data-izing button	The pattern that is displayed in the output screen is made to be a file of 256-color VBM data
	Close	Close the Simulation screen.

2.10.3. Operation methods

(1) Loading the file

Before creating new optional pattern data, proceed with "Creating and editing the optional patterns" in (2) below. The source code is loaded from a file which has already been saved.

- 1) Click the [Load] button.
- 2) The "Load File" file selection dialog box is opened. Select the file, and click the [OK] button.
- 3) The source code of the selected file is now displayed in the editing area.
 - If the layout data has been set
The code registered in the layout is displayed at [Code].
 - If the layout data has not been set
[Code] is cleared.

(2) Creating and editing the optional patterns

- 1) Load the source code into the editing area. For details on creating these codes, refer to "make_opt.txt" or to the "Help for creating optional patterns" (OptionPatternRef.Help).
- 2) Click the [Compile] button to start compiling.
- 3) When "Compile OK." appears on the compiling screen, it means that the compiling has been successfully completed. The optional pattern language, which is an intermediate language, is now created from the source code.
- 4) To execute a simulation on the window screen, click the [Exec] button. A simulated image of the compiled optional pattern data is now displayed on the "Execute Image" simulation window. Check the operation.

(3) Saving the file

The displayed source code is saved in the file.

Click the [Save] button. ⇒ The data is saved in the selected file and any existing data in that file is overwritten.

Click the [Save As] button. ⇒ The data is saved in a new file.

(4) Sending the optional pattern

- 1) Click the [Send] button. The "Send to VG" code selection dialog box appears.
 - 2) Set the optional pattern code (0x40 to 0x7F in hexadecimal format).
 - 3) Click the [OK] button. The data is now sent to the VG and registered. (The code shown at [Code] now changes to that of the sent character.)
- (*) When [Set File Name] is checked, the dialog box for selecting the data to be sent is opened after the [OK] button has been clicked. By selecting the data, it is possible to send optional pattern data regardless of the optional pattern being edited.

(5) Receiving the optional patterns

- 1) Click the [Receive] button. The "Receive from VG" code selection dialog box now appears.
 - 2) Set the optional pattern code (0x40 to 0x7F in hexadecimal format).
 - 3) In [Write File Name], input the name of the file in which the optional pattern data is to be written.
 - 4) Click the [OK] button. The reception of the character is now started. (The code shown at [Code] now changes to that of the received character.)
- (*) The received optional patterns cannot be displayed in the editing area since they are in the form of the optional pattern language which is an intermediate language. Neither can they be edited.

Characters can be received using an old VG model but they cannot be sent to one.

(6) Printing the optional patterns

- 1) Click the [Print] button.
- 2) The "Print" printer setting dialog box appears. Set the margins here.
- 3) Click the [OK] button. The displayed optional pattern source code is now printed.
- 4) To change the printer environment which has been set, click the [Set Printer...] button.
- 5) The printer setting dialog box appears. Proceed with the printer settings. For details on how the items on this dialog box are set, refer to the instruction manual for Windows or for the printer which will be used.

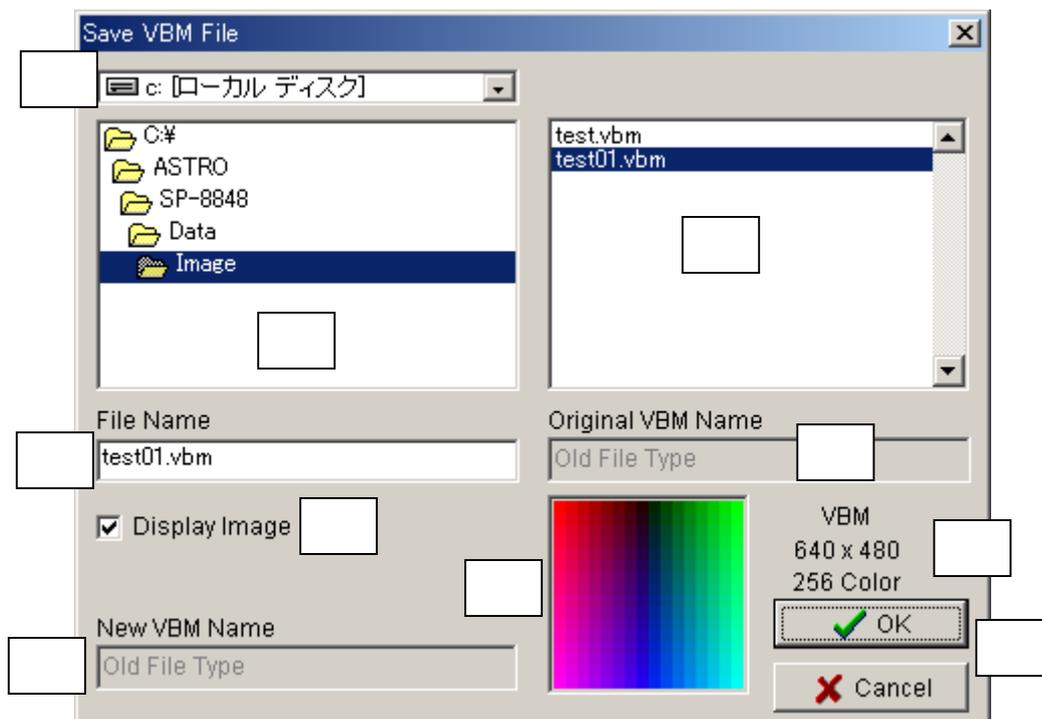
(7) Changing the font

Take the following steps to change the font. When the [Font] button is clicked, the font change dialog box appears. The resulting settings are saved and used on the next and subsequent occasions. Only the font displayed in the editing area and the font for printing are affected by the settings.

2.10.4. Convert to 256-color VBM file

User option pattern is converted to 256-color VBM file.

- (1) Write a source code in the edit area. Click [Compile] button, then confirm the message “Compile OK” on the Compile screen is displayed and compile is completed. By doing this, option pattern language that is a “middle language” is made from source code.
- (2) Click [Exec] button. Display the screen of compiled Option pattern data on the Simulation window “Execute Image”. If compile fails, black screen is displayed.
- (3) After confirming the pattern is displayed on the simulation screen, click [To VBM] button. The file saving screen like below is displayed.



No.	Item	Addendum
	Drive name of saving destination	
	Directory of saving destination	Default is an image folder.
	VBM file list	
	Saving VBM file name	
	Old comments	
	Image display / no display	
	New comments	
	VBM image display	
	VBM file information	
	VBM file saving OK/Cancel	

- (4) When pressing OK button in the file saving screen, user option data becomes a file as 256-color VBM data. It takes a certain amount of time to make a VBM file.

Caution when making 256-color VBM file

The display color of VBM file is 256-color only. When displaying 8-bit plane (256-color), 1-bit plane (one color) and Window plane (one color) simultaneously, the display color is supposed to be 258-color. In this case, upper two-color of 8-bit plane is assigned to 1-bit plane and Window plane.

(1) 8-bit, 1-bit and Window plane are displayed simultaneously.

Palette No.	Setting color	
0	8-bit plane palette	
1		
2		
3		
.		
.		
.		
253		
254		1-bit plane color
255		Window plane color

(2) 8-bit and 1-bit plane are displayed simultaneously.

Palette No.	Setting color	
0	8-bit plane palette	
1		
2		
3		
.		
.		
.		
254		
255		1-bit plane color

(3) 8-bit and Window plane are displayed simultaneously.

Palette No.	Setting color	
0	8-bit plane palette	
1		
2		
3		
.		
.		
.		
254		
255		Window plane color

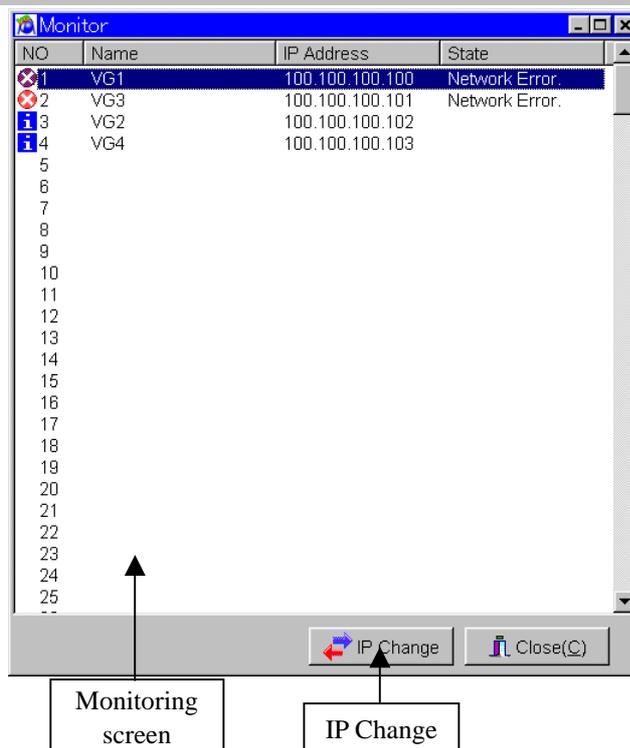
2.11. Monitoring and changing the IP/Gateway address

This section describes how to monitor the statuses of the VGs which have been connected using a LAN communication setup. It also explains how to change the IP addresses of the connected VGs.

2.11.1. Startup method

Click the [Monitor] button of "VGBase" to start up the "Monitor."

2.11.2. Window screen and description



Monitoring screen

The statuses of the connected VGs are displayed here.

IP Charge

When this is clicked, the "IP change" dialog box appears.

2.11.3. Operation methods

(1)Monitoring

The statuses of the connected VGs can be monitored by observing the icon displays at the far left of the screen and checking what appear in the [State] column.

There are three VG statuses: "Normal" (indicating that the VG is functioning normally), "VG Error." (indicating that trouble has occurred in the VG) and "Network Error." (indicating that trouble has occurred in the network).

(2)Changing an IP address

1) Click the [IP Change] button.

2) The "IP change" dialog box appears.

3) To change an IP address, check the [New IP Address] check box, and input the new IP address into the text box.

4) When the [OK] button is pressed, the process for changing the IP address is executed.

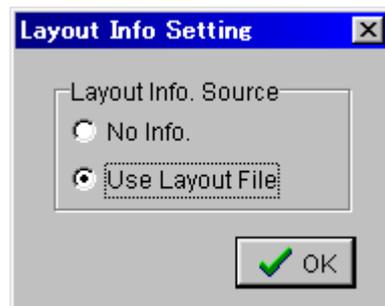
2.12. Selecting and editing the layout data files

This section explains how to select and edit the layout data files used by "VGBase."

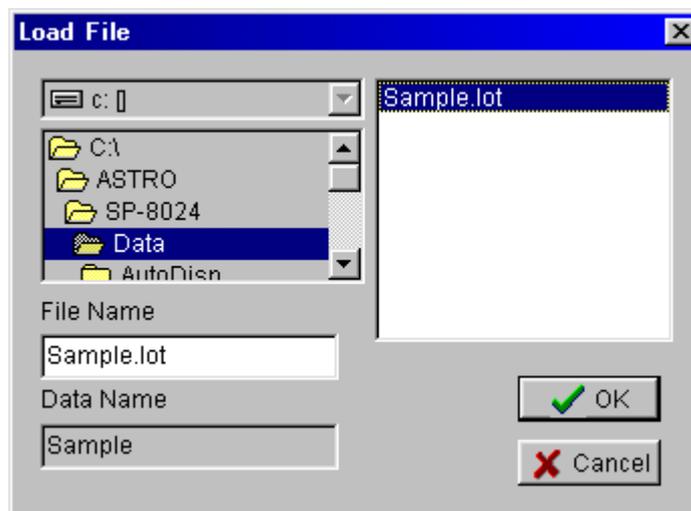
2.12.1. Startup method

(1)Layout Info Setting

Click the [Select] button of "VGBase" to start up the "Layout Info Setting."



Select "No Info" when no layout data files are going to be used and [Use Layout File] when they are going to be used. When [No Info] is selected, operation returns to "VGBase" straight away. In this case, the layout data cannot be edited. When [Use Layout File] is selected, the "Load File" file selection dialog box is displayed.



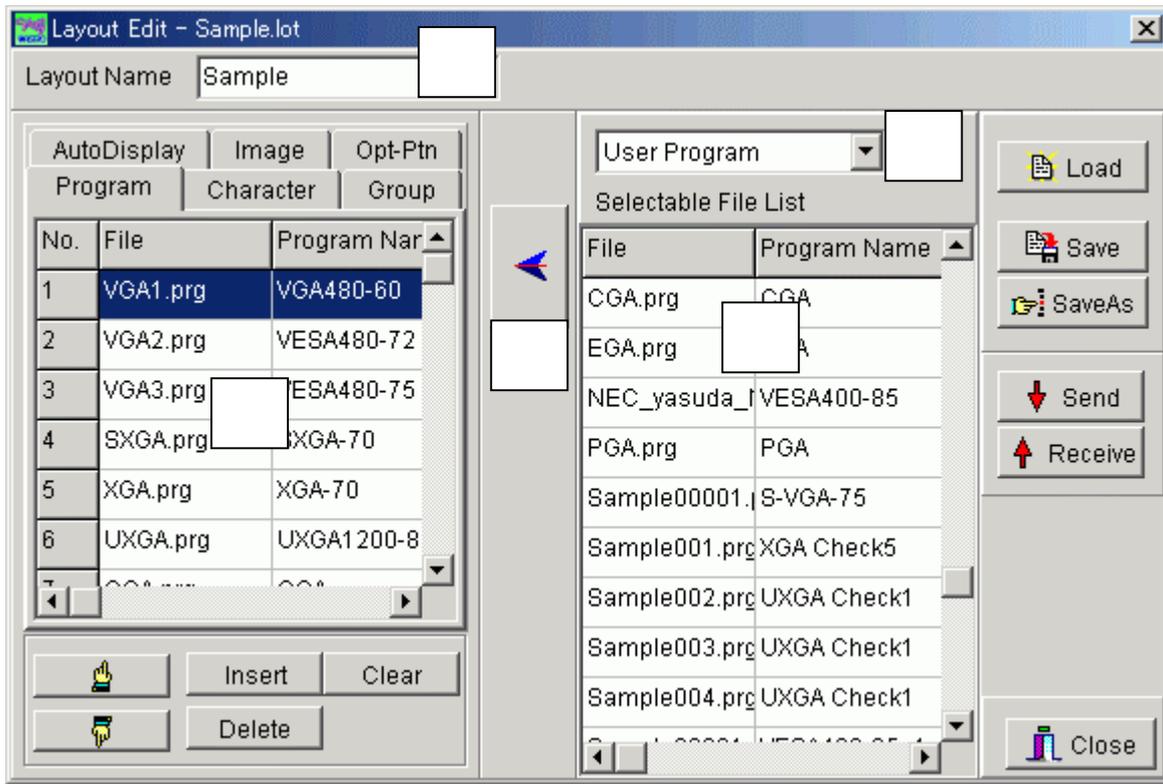
Select the layout data file to be used, and select [OK]. (To create a new file, set the filename in the [File Name] box.) Operation now returns to "VGBase."

(2)Layout Edit

Click the [Edit] button of "VGBase," and start up the "Layout Edit."

2.12.2. Window screen and description (Layout Edit)

Program tab



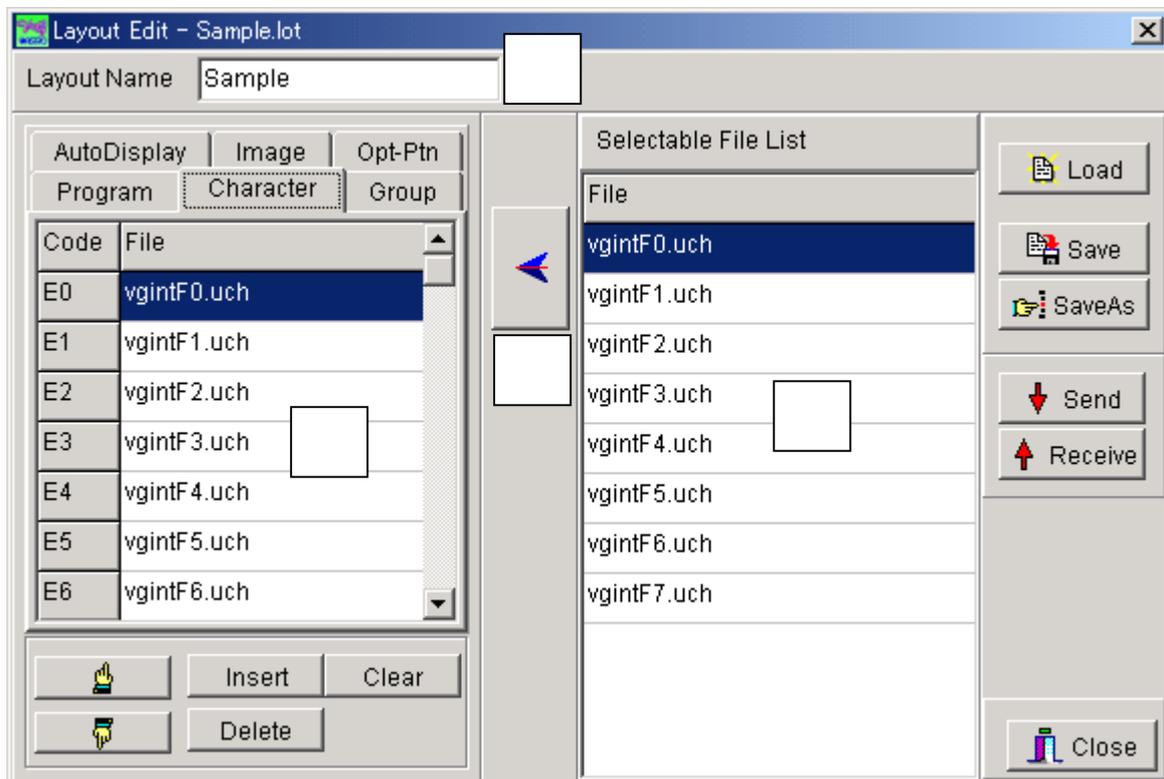
No.	Item	Details
	Layout Name	The name of the layout data is displayed here.
	Layout data list	The program data which has been registered is displayed here.
	Data folder	The folder of the registered program data is selected. The folder that can be selected by set VG is different.
	Data file list	The data created by the editing program is displayed here.
	Set	Click this to register the data from the data file list into the layout data list.

About the data folder

The folder of the registered program data is selected. The folder that can be selected by set VG is different.

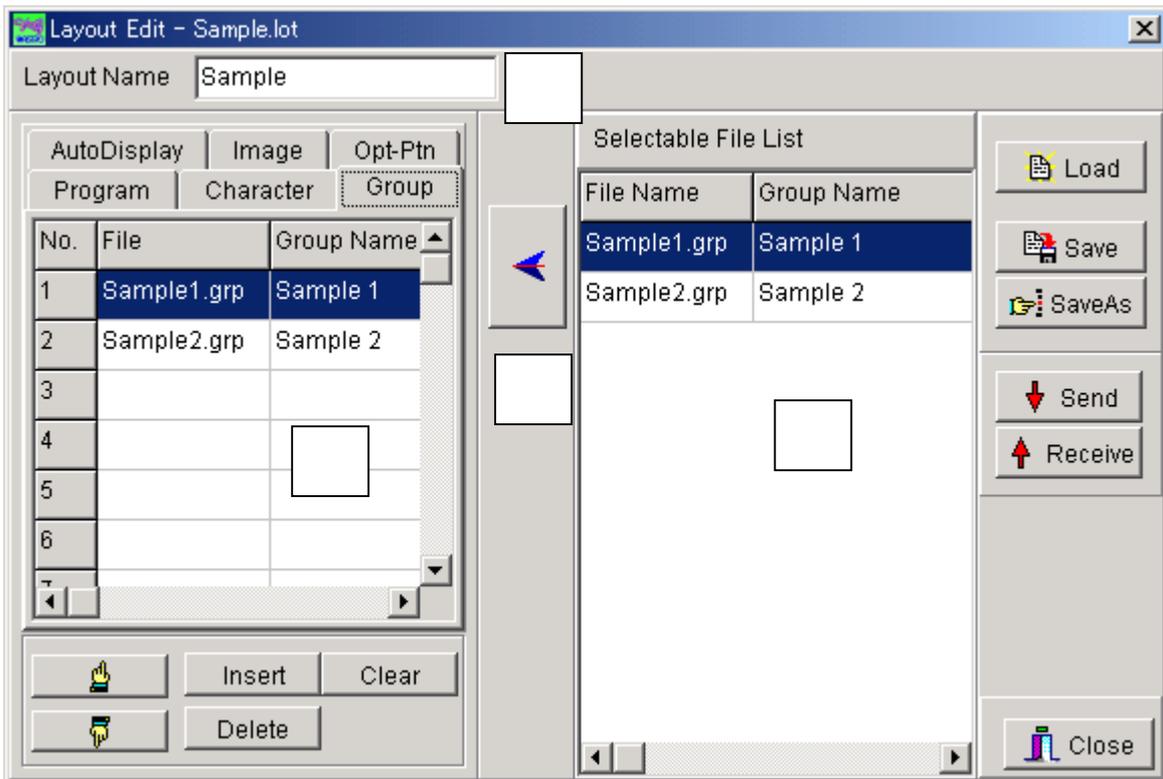
VG	folder			
VG-848	Program	VGInt	VGInt2_848	
VG-849	Program	VGInt	VGInt2_849	VGInt3_849
VG-858	Program	VGInt	VGInt2_848	
VG-859	Program	VGInt	VGInt2_849	VGInt3_849
VG-830	Program	VGInt	VGInt2_848	
VG-835	Program	VGInt	VGInt2_835	
VG-835-A	Program	VGInt	VGInt2_835	
VG-857	Program	VGInt	VGInt2_835	
Other VG	Program			

Character



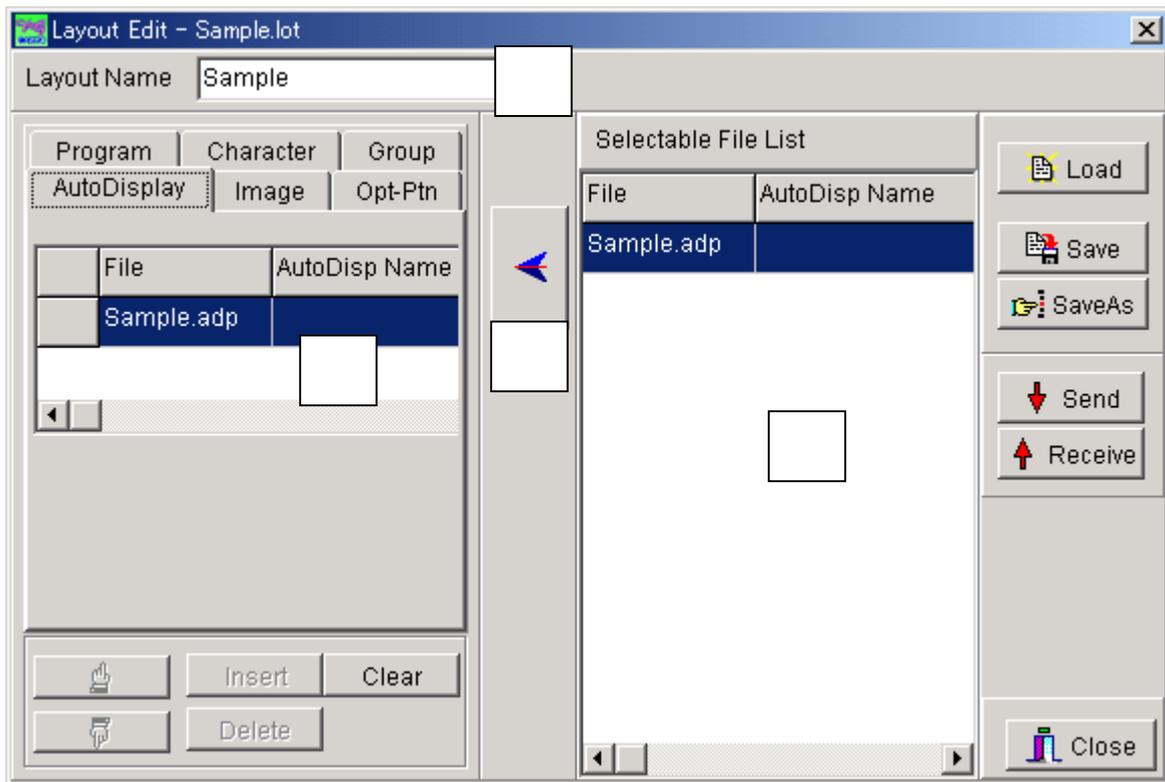
No.	Item	Details
	Layout Name	* See same item in program tab section.
	Layout data list	* See same item in program tab section.
	Data file list	* See same item in program tab section.
	Set	* See same item in program tab section.

Group tab



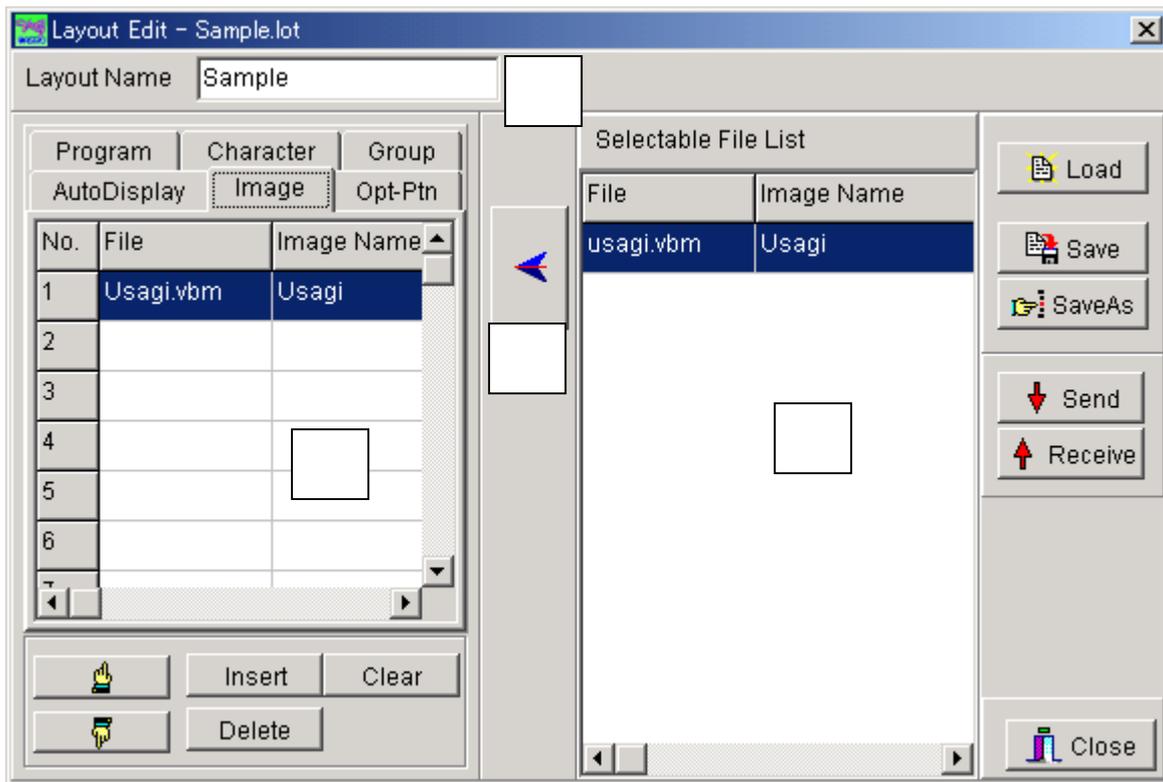
No.	Item	Details
	Layout Name	* See same item in program tab section.
	Layout data list	* See same item in program tab section.
	Data file list	* See same item in program tab section.
	Set	* See same item in program tab section.

AutoDisplay tab



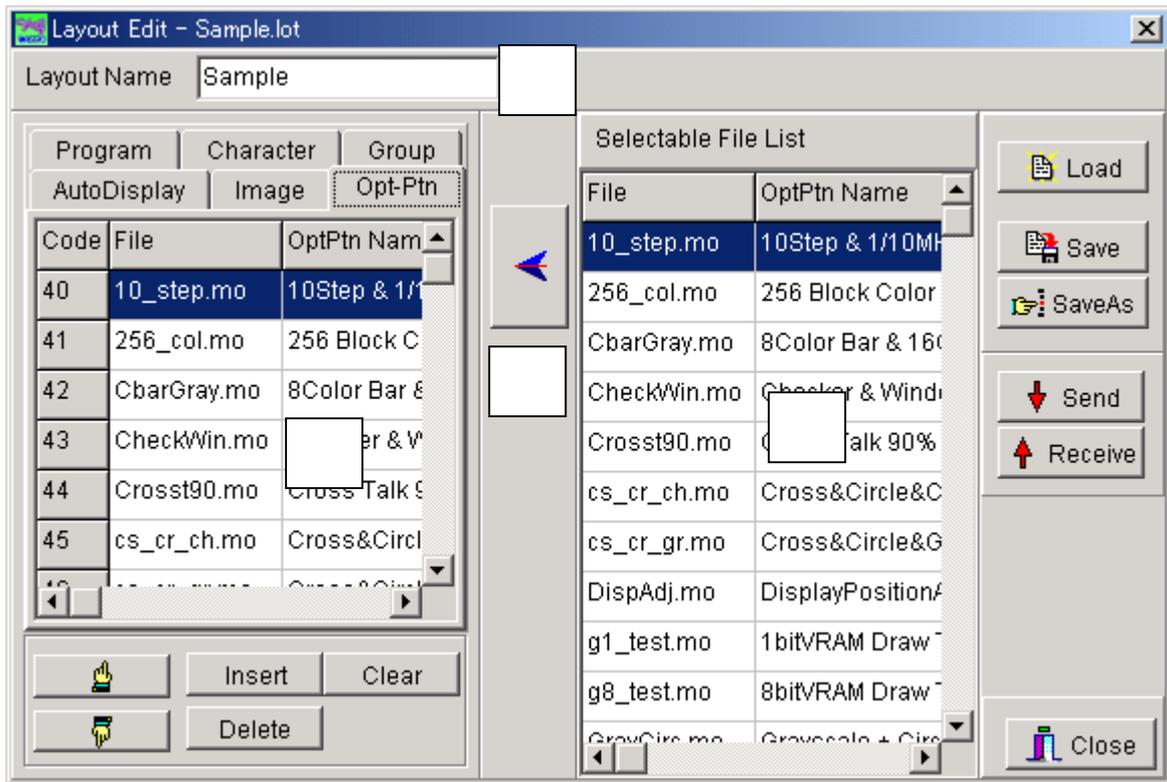
No.	Item	Details
	Layout Name	* See same item in program tab section.
	Layout data list	* See same item in program tab section.
	Data file list	* See same item in program tab section.
	Set	* See same item in program tab section.

Image tab



No.	Item	Details
	Layout Name	* See same item in program tab section.
	Layout data list	* See same item in program tab section.
	Data file list	* See same item in program tab section.
	Set	* See same item in program tab section.

Opt-Ptn tab



No.	Item	Details
	Layout Name	* See same item in program tab section.
	Layout data list	* See same item in program tab section.
	Data file list	* See same item in program tab section.
	Set	* See same item in program tab section.

2.12.3. Operation methods (Layout Edit)

Editing the layout data

- 1) Click the tab ([AutoDisplay], [Image], [Opt-Ptn], [Program], [Character] or [Group]) corresponding to the type of data which is to be registered as the layout data. The [Selectable File List] of the data file which corresponds to the selected tab is displayed.
- 2) Select the data to be registered from the [Selectable File List].
- 3) Place the cursor at the cell of the position where the data is to be registered in the layout data list.
- 4) When the [←] button is clicked, the data is registered from the [Selectable File List] into the layout data list. Repeat these steps to create the layout data. Use the respective editing programs to create the data files on the data file list.

Saving the layout data

The displayed layout data is saved in the file.

Click the [Save] button. ⇒ The data is saved in the selected file and any existing data in that file is overwritten.

Click the [Save As] button. ⇒ The data is saved in a new file.

(*) When the data is to be used temporarily:

When the edited layout data is to be tested or when the layout data is to be used temporarily in the editing programs started up from "VGBase," simply select the Close button and close the editing screen. If an attempt is made to close "VGBase" without saving the data, a message which warns the operator of the loss of the post-edited layout data will appear. At this time, save the data again.

Sending the data

- 1) Click the [Send] button. The "Transfer Data" data selection dialog box appears.
 - 2) Select the data to be sent. Before sending it, check the data. (It takes time for all the data to be sent. To test sending the data quickly, check [Character Data] or [Auto Display Data], and send it.)
 - 3) Click the [OK] button.
 - 4) The selected data is sent to the VG.
- (*) The data is sent on the basis of the layout data information. Data numbers and code data which have not been set in the layout data will not be sent. This means that the sent data will be registered and updated by the VG, but the statuses of the data numbers and code data which are not sent will remain unchanged from the pre-transmission statuses.

Receiving the data

- 1) Click the [Receive] button. The "Transfer Data" data selection dialog box appears.
 - 2) Select the data to be received. Before receiving it, check the data. (It takes time for all the data to be received. To test receiving the data quickly, check [Character Data] or [Auto Display Data], and receive it.)
 - 3) Click the [OK] button.
 - 4) The progress display starts, and the selected data is received from the VG.
 - 5) The layout data list is updated in accordance with the data which has been received.
- (*) Bear in mind that since the layout data will be overwritten in accordance with the data which has been received, some of the layout data being edited will be rewritten.
- (*) Before receiving the data, check whether or not the data has been registered in the VG, and receive only data which has been registered. The layout data is updated only on the basis of the numbers of the data registered in the VG. Layout data with the numbers of the data not registered in the VG will not be updated, and their pre-reception contents will remain unchanged. Therefore, to create new layout data by data reception, the first step to be taken is to specify a new file by performing the steps for selecting a layout data file or clear the layout data being edited.
- (*) Precaution when groups are to be received separately
- Groups are managed in the VG by program data numbers, and these numbers are received also when the data is received from the VG. If layout data has been used, steps are taken to ensure that the program data numbers correspond to the program files on the basis of the layout data information. A correct correspondence will be established if the layout data of a program matches what has been registered in a program inside the VG. If they do not match, the program name and program file will not be found, and data will not be saved in the file. This means that the program data number and program name will not be displayed even when the group contents are checked using the group editing program. To ensure that this problem does not occur, before receiving groups, either receive a program or select the layout data setting which does not call for the layout data to be used.

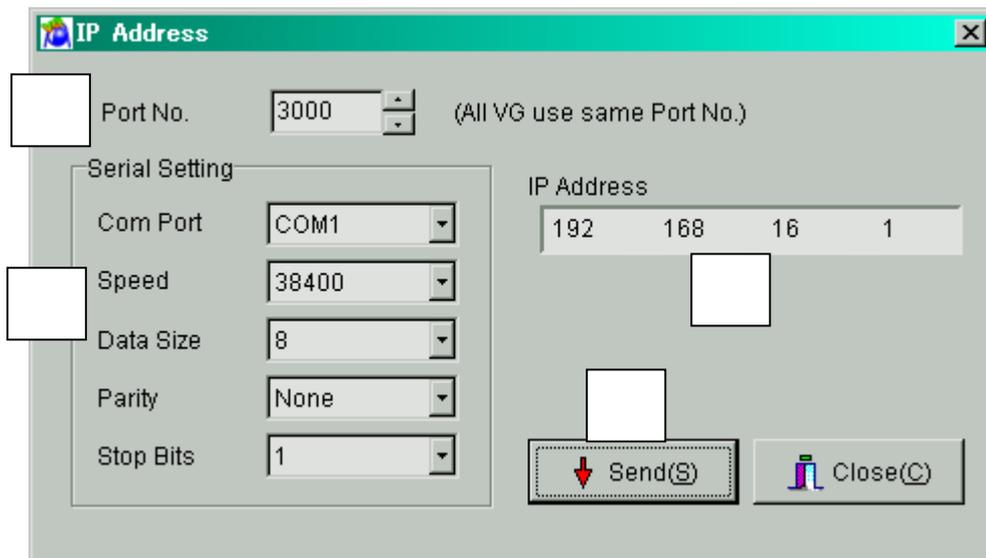
2.13. Setting the port number and IP address

This section describes how to set the port number and IP address for the individual VGs which are connected serially.

2.13.1. Startup method

Select [Start] → [Programs] → [SP-8848] → [IPAddressSet].

2.13.2. Window screen and description



No.	Item	Details
	Port No.	The number of the VG's port is set here.
	Serial settings	Com port: The port number is selected here. Speed: The transfer (baud) rate is set here. Data Size: The communication data size is set here. Parity: "Even," "Odd" or "None" is selected as the parity here. Stop Bits: "1," "1.5" or "2" is selected as the stop bits.
	IP address	The IP address of the VG is set here.
	Send	Set Internet Protocol address is transmitted to VG.

2.13.3. Operation methods

Setting the port number and IP addresses

- 1) Select the serial settings in each of the text boxes under [Serial Setting].
- 2) Input the port number which is to be set in the [Port No] text box. Set the same port number for all the VGs connected by LAN communication.
- 3) Input the IP address to be set in the [IP Address] text box. Set a different IP address for each VG.
- 4) Press the [Send] button. The port number and IP addresses are sent to the VGs.

2.13.4. General IP address classes

IP addresses fall into two categories, ones (global addresses) which are allocated to computers connected to the Internet and ones (private addresses) which are used by LANs, etc.

Depending on the IP address, the following conventions apply to the private addresses used for LANs.

Class A

10.0.0.0 to 10.255.255.255

The number used for the 3-digit number in the first block is always "10," and it is followed by combinations of numbers from 0 to 255. Use of this class of IP address enables up to 16 million computers to be connected by a single network.

Class B

172.16.0.0 to 172.31.255.255

The number used for the 3-digit number in the first block is always "172," and numbers from 16 to 31 are used for the 3-digit number in the second block. Use of this class of IP address enables up to 65,534 computers to be connected by a single network.

Class C

192.168.0.0 to 192.168.255.255

The numbers used for the 3-digit number in the first two blocks are always "192.168," and numbers from 0 to 255 are used for the 3-digit number in the third block. Numbers "0," "1" and "255" are not normally allocated as the 3-digit number in the fourth block.

Use of this class of IP address enables up to 256 computers to be connected by a single network.

The IP addresses in class C are used to configure a LAN in an environment such as a small-scale office.

*IP address Class D also exists, but since the addresses in this class are special IP addresses used for multi-cast communication, they should not be used.

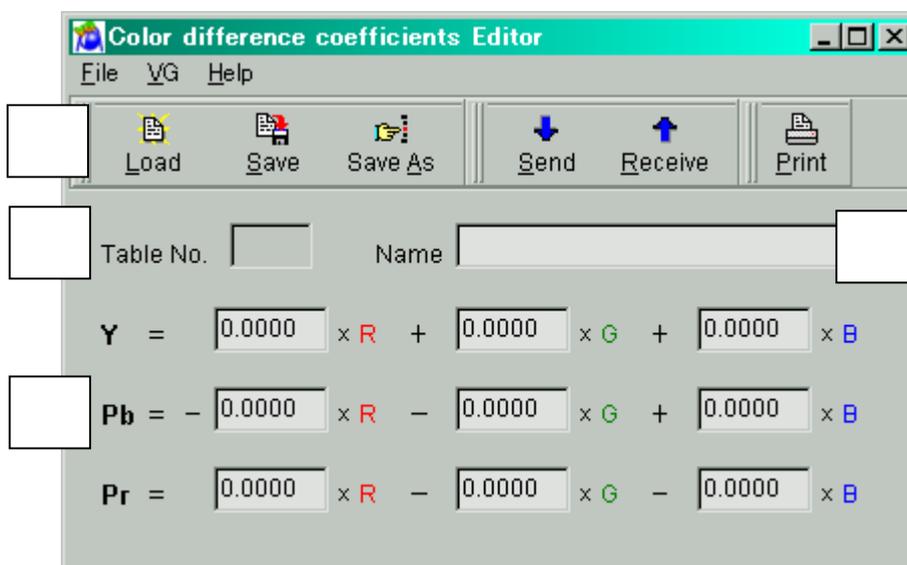
2.14. Color difference coefficient data editing program

This section describes how to use the editing program to set the color difference coefficient data of the VG. The program enables the color difference coefficient data of the VG to be edited in Windows, the edited color difference coefficient data to be sent to the VG, and color difference coefficient data from the VG to be received.

2.14.1. Startup method

Select [Start] → [Programs] → [SP-8848] → [CDCEdit].

2.14.2. Window screen and description



No.	Item	Details
	Toolbar	<p>Load: Click this to load the color difference coefficient data.</p> <p>Save: Click this to save the color difference coefficient data in a file and overwrite any existing data in that file in the process.</p> <p>Save As: Click this to save the color difference coefficient data in a new file.</p> <p>Send: Click this to send the color difference coefficient data which is being edited to the VG.</p> <p>Receive: Click this to receive the color difference coefficient data from the VG.</p> <p>Print: Click this to print the color difference coefficient data.</p>
	Table No	The number of the color difference coefficient data table which has been sent to or received from the VG appears here.
	Name	The name of the displayed color difference coefficient data appears here.
	Editing area	This is the part of the screen where the color difference coefficient data is created, changed and displayed.

2.14.3. Operation methods

(1) Loading the file

The color difference coefficient data is loaded from a file in which it was saved.

- 1) Click [Open] on the [File] menu. The file selection dialog box now appears.
- 2) Select the file, and press the [OK] button.
- 3) The data of the selected file is now displayed.

(2) Creating and editing the color difference coefficient data

The color difference coefficient data is edited.

- 1) Input the data in a range from 0.0000 to 1.0000.
- 2) Input the name of the data in "Name." This name can consist of a maximum of 20 characters.

(3) Saving the file

The displayed data is saved in a file.

When [Save] on the [File] menu is selected, the data is saved in the selected file and any existing data in that file is overwritten.

When [Save As] on the [File] menu is selected:

- 1) The file selection dialog box appears.
- 2) Input the filename, and press the [OK] button. The displayed data is now saved in the new file.

(4) Sending the color difference coefficient data

The color difference coefficient data is saved in the VG.

- 1) Click [Send] on the [VG] menu. The send dialog box appears.
- 2) Set the number of the data table.
- 3) Select the [OK] button. The color difference coefficient data is now sent to the VG. (The table number of the data sent now replaces the previous number appearing in [Table No.])

(5) Receiving the color difference coefficient data

The color difference coefficient data from the VG is loaded.

- 1) Click [Receive] on the [VG] menu. The receive dialog box appears.
- 2) Set the number of the data table.
- 3) Select the [OK] button. The reception of the color difference coefficient data now starts. (The table number of the data received now replaces the previous number appearing in [Table No.])

(6) Printing the color difference coefficient data

The displayed color difference coefficient data is printed.

- 1) Click [Print] on the [File] menu.
- 2) The print dialog box appears. Set the block numbers to be printed and the margins here.
- 3) Press the [OK] button. The displayed color difference coefficient data is now printed.
- 4) To change the printer which has been set, click the [Set Printer...] button.
- 5) The printer setting dialog box appears.

2.14.4. Menus

[File] menu

Load	This is used to load data from the files.
Save	This is used to save data in the files.
Save As	This is used to save the data under a different filename.
Print	This is used to print the displayed data.
Close	This is used to close the program.

[VG] menu

Send to VG	This is used to send the color difference coefficient data being edited to the VG.
Receive from VG	This is used to receive the color difference coefficient data from the VG.

[Help] menu

Contents	This displays the help information.
Index	This displays a list of the help topics which can be searched.
About	This displays the version information.

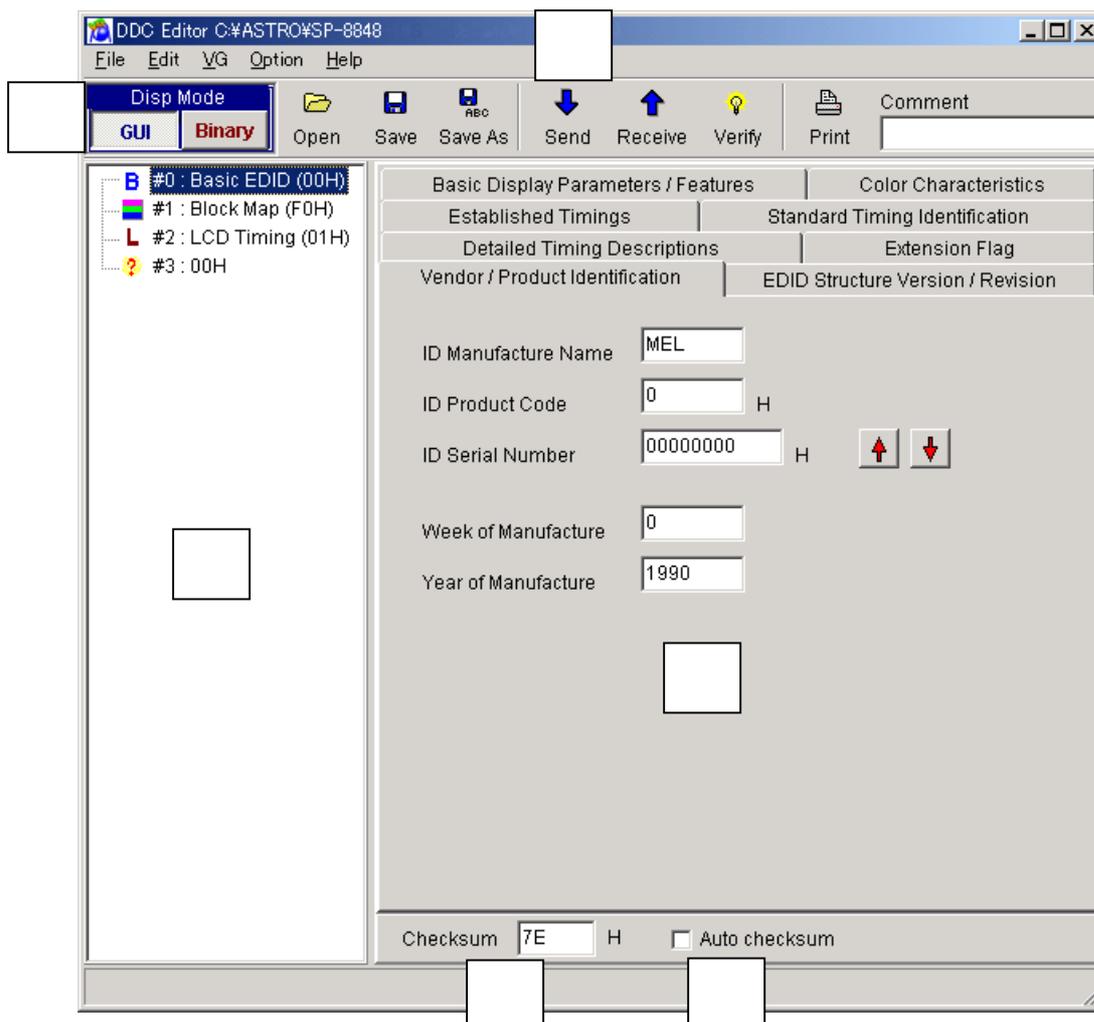
2.15. Creating and editing the DDC data

This section describes the program used to set DDC data of the programmable video signal generator (hereafter abbreviated to "VG"). The program enables the DDC data of a DDC-compatible monitor to be send, received and edited in Windows.

2.15.1. Startup method

Select [Start] → [Programs] → [SP-8848] → [DDCEdit].

2.15.2. Window screen and description



No.	Item	Details
	DispMode selectors	<p>These are used to select either the GUI display mode or the binary display mode.</p> <p>GUI display mode For the block types supported by this mode, the data is displayed on a screen that allows for easy graphical readout. For block types which are not supported, the data is displayed in the binary mode.</p> <p>Binary display mode The data is displayed in a 128-byte binary format.</p>
	Toolbar	<p>Open: Click this to open the DDC data.</p> <p>Save: Click this to save the DDC data in a file and overwrite any existing data in that file in the process.</p> <p>Save As: Click this to save the DDC data in a new file.</p> <p>Send: Click this to send the DDC data which is being edited to the monitor.</p> <p>Receive: Click this to receive the DDC data from the monitor.</p> <p>Verify: Click this to compare the DDC data being edited against the data stored in the monitor's ROM.</p> <p>Print: Click this to print the DDC data.</p> <p>Comment: A comment for the DDC data can be entered here.</p>
	Block type list	A list of the block types appears here. The block number and block type (1-byte block code at the head) are displayed for each block.
	Data display	The data of the block selected on the block type list on the left is displayed here.
	Checksum	<p>The checksum value is displayed here.</p> <p>The checksum is the value of the last byte of the block.</p> <p>When "Auto checksum" is checked, the checksum value is automatically updated each time the data is changed.</p>
	Automatic checksum calculation ("Auto checksum")	When this is checked, the checksum value is automatically updated each time the data is changed.

2.15.3. operation methods

Creating new DDC data

- 1) Click [New] on the [File] menu.

The dialog box for selecting the number of blocks (size of the monitor ROM) to be created appears.

- 2) Select a number of blocks which are to be created to fit in with the size of the monitor ROM, and press the [OK] button. The specified number of blocks are now created. The initial value of all the data is "0."

(*) The number of blocks can be changed even after new blocks have been created.

Opening the file

A file which has been saved is opened, and the DDC data is loaded from it.

- 1) Select [Open] on the [File] menu or select the  button from among the tool buttons.
- 2) Select the file, and press the [OK] button.
- 3) The selected file is opened, and the DDC data in that file is displayed.

Loading the data in individual blocks from the file

The DDC data in the specified block is loaded from the file.

- 1) Select the block whose DDC data is to be loaded.
- 2) Click [Load One-Block] on the [File] menu. The file selection dialog box appears.
- 3) Select the file, and press the [OK] button. Next, the block selection dialog box appears.
- 4) Select the block whose data is to be loaded, and press the [OK] button.
- 5) The DDC data in the specified block is loaded and displayed.

Editing the DDC data

The block type is determined first, and then the data is edited.

- 1) Decide which block type is to be selected. Select the block to be edited, and click [Change Block Type] on the [Edit] menu. The block type selection dialog box appears. Select the target block type, and press the [OK] button.
- 2) If the GUI display mode is established at the time, the display format is switched by the block type. If the binary display mode is established at the time, 128 bytes are dumped and displayed. For details on the data, refer to the reference documentation.

Saving the file

The displayed data is saved in a file.

- 1) When [Save] on the [File] menu is selected or the  button among the tool buttons is clicked, the data is saved in the selected file and any existing data in that file is overwritten.
- 2) When [Save As] on the [File] menu is selected or the  button among the tool buttons is clicked, the file selection dialog box appears. Input the filename and press the [OK] button. The displayed characters are saved in the new file.

Sending data to the monitor

The DDC data is saved in the monitor ROM.

- 1) When [Send] on the [VG] menu is selected or the  button is clicked on the toolbar, the send dialog box appears.
- 2) Select DDC1 or DDC2B, and decide on the numbers of the blocks (how many blocks starting from block #0) to be sent. When the [Fix Monitor] button is pressed, communication with the monitor is initiated, and the amount of the data can be matched with the maximum size of the monitor ROM.
- 3) Press the [OK] button. The DDC data is now sent.

Receiving data from the monitor

The DDC data is loaded from the monitor ROM.

- 1) When [Receive] on the [VG] menu is selected or the  button is clicked on the toolbar, the receive dialog box appears.
- 2) Select DDC1 or DDC2B, and decide on the numbers of the blocks (how many blocks starting from block #0) to be received. Press the [OK] button to start receiving the DDC data.
- 3) The received DDC data is now displayed.

Verifying the data against the data in the monitor ROM

The DDC data is loaded from the monitor ROM, and the DDC data now being edited is checked against it.

- 1) When [Verify] on the [VG] menu is selected or the  button among the tool buttons is clicked, the verify dialog box appears.
- 2) Select DDC1 or DDC2B, and decide on the numbers of the blocks (on how many blocks starting from block #0) are to be sent and on the mask settings. The mask settings can be set only for the product code and serial number of the Basic EDID. If these items are checked, they will not be verified.
When the [Fix Monitor] button is pressed, communication with the monitor is initiated, and the amount of the data can be matched with the maximum size of the monitor ROM. Press the [OK] button to start verifying the DDC data.

Printing the DDC data

The displayed DDC data is printed in the binary format.

- 1) Select [Print] on the [File] menu or select the  button among the tool buttons.
- 2) The print dialog box appears. Set the block numbers to be printed and the margins here.
- 3) Press the [OK] button. The displayed DDC data is now printed in the binary format.
- 4) To change the printer which has been set, click the [Set Printer...] button.
- 5) The printer setting dialog box appears.

2.15.4. Menus

[File] menu

Menu command	Description of function
New	This is used to create new data.
Open	This is used to open a file.
Load One-Block	This is used to load the data of one block from a file.
Save	This is used to save data in the files.
Save As	This is used to save the data under a different filename.
Close	This is used to close the file.
Properties	This is used to display the file properties.
Print	This is used to print the displayed data.
Exit DDC Editor	This is used to exit the program.

[Edit] menu

Menu command	Description of function
Insert-up Block	This is used to insert a new block before the current block.
Insert-down Block	This is used to insert a new block after the current block.
Delete Block	This is used to delete a block.
Copy Block	This is used to copy a block.
Move Block	This is used to move a block
Change Block Type	This is used to change the block type.

[VG] menu

Menu command	Description of function
Send to VG	This is used to send the DDC data being edited to the monitor.
Receive from VG	This is used to receive the DDC data from the monitor.
Verify	This is used to check the DDC data being edited against the data in the monitor ROM.

[Option] menu

Menu command	Description of function
Binary Byte (1 byte)	With a binary format display, this is used to delimit the data on a byte by byte basis, and display the data.
binary Short (2 byte)	With a binary format display, this is used to delimit the data every 2 bytes, and display the data.
Binary Long (4 byte)	With a binary format display, this is used to delimit the data every 4 bytes, and display the data.
DDC2B	This is used to communicate using DDC2B.
DDC1	This is used to communicate using DDC1.

[Help] menu

Menu command	Description of function
Contents	This displays the help information.
Index	This displays a list of the help topics which can be searched.
About	This displays the version information.

2.15.5. Block operations**Inserting a block before the current block**

Click the block immediately below the position where the block is to be inserted.
Click [Insert-up Block] on the [Edit] menu.

Inserting a block after the current block

Click the block immediately above the position where the block is to be inserted.
Click [Insert-down Block] on the [Edit] menu.

Deleting a block

Click the block to be deleted.
Click [Delete Block] on the [Edit] menu.

Copying a block

Click the block to be copied.
Click [Copy Block] on the [Edit] menu.

Moving a block

Click the block to be moved.
Click [Move Block] on the [Edit] menu.

Changing the block type

Click the block whose type is to be changed.
Click [Change Block Type] on the [Edit] menu.

2.16. Cursor tool program

This section describes how to move the VG's cursor pattern just as would be done using a mouse and save the coordinates of defective pixels and other data in files.

2.16.1. Startup method

Select [Start] → [Programs] → [SP-8848] → [Curtool].

2.16.2. Window screen and description

No.	Type	X	Y	R	G	B	R(BG)	G(BG)	B(BG)	Time / Day	Remarks
1	Uniformity	400	300	255	255	255	127	127	127	04/16/2003 01:23:07 PM	
2	Line	400	300	255	255	255	127	127	127	04/16/2003 01:23:09 PM	

No.	Item	Details
	Toolbar	<p>New: Click this to create a new defective pixel list.</p> <p>Save: Click this to save the defective pixel list in a file and overwrite any existing data in that file in the process.</p> <p>Save As: Click this to save the defective pixel list in a new file.</p> <p>Pixel: Click this to add missing pixels to the defective pixel list.</p> <p>Line: Click this to add missing lines to the defective pixel list.</p> <p>Uniformity: Click this to add lost uniformity to the defective pixel list.</p> <p>etc: Click this to add other missing or lost aspects (other than pixels, lines and uniformity) to the defective pixel list.</p> <p>Reset: Click this to retry communication with the VG.</p> <p>Print: Click this to print the defective pixel list.</p>
	Output screen image display	Images of the VG's output screens appear here. The cursor pattern can be moved by dragging the image with the mouse or pressing the arrow buttons.
	Comment	A comment can be entered for the whole defect list here.
	Position (cursor pattern position)	The current cursor pattern coordinates are displayed here. When these coordinates are changed, the cursor pattern is moved.
	Cursor pattern properties	The cursor pattern properties are displayed and changed here. When they are changed, the VG's settings are changed, but the "Flicker" and "PosDisp" settings are not reflected on the screen image displays provided by this program.
	Defective pixel list	Defective pixels are continuously being added to this list.
	Scale ratio	The scale ratio of the output screen image display is displayed here as a percentage. It is automatically calculated from the timing data being executed and screen size.
	Resolution	The resolution of the timing data being executed is displayed here.
	Status	The kind of status data which appears here changes in accordance with the mouse position. When the mouse is on the output screen image display, the mouse coordinates are indicated; at other times, suggestions or comments appear.

2.16.3. Operation method

Startup

At startup, the VG model and currently executed resolution are captured, and a screen matching these states is displayed. In addition, the cursor pattern position changes to the center coordinates and the properties change to the default values.

- 1) Connect the VG and monitor, and display the VG's output screen on the monitor.
- 2) Connect the PC and VG, and turn on the power of the VG.
- 3) Set the VG to a state in which the cursor pattern is selected after some kind of timing data has been executed. The cursor pattern is now displayed on the monitor.
- 4) Start this program from the start menu.

* In the following cases, an error message appears, and no further communication is possible. To resume communication, either restart the program or press the Reset button on the toolbar after the program has started to retry communication.

- When the VG has not been connected
- When no timing data at all has been executed after the power of the VG was turned on
- When the cursor pattern has not been selected.

* Retrying communication

Retry communication with the VG.

Just as at the startup stage, the VG model and currently executed resolution are captured, and a screen matching these states is displayed. In addition, the cursor pattern position changes to the center coordinates and the properties change to the default values.

Moving the cursor pattern

The coordinates can be changed by dragging the mouse, clicking the arrow buttons or inputting the data directly into the coordinate boxes.

Method	Operation
Dragging the mouse	This moves the pattern to the coordinates to which the mouse was dragged.
Clicking the arrow buttons	This moves the pattern by one pixel each time one of the buttons is pressed.
Inputting data directly into the coordinate boxes	This moves the pattern to the position of the coordinates which have been input.

Adding to the defective pixel list

Types, coordinates, cursor colors, background colors, dates/times and comments can be added as the defective pixel data to the defective pixel list.

- 1) Align the cursor pattern with the defective pixel.
 - 2) In accordance with the defect type, press the button used to add the defective pixel.
 - 3) Select [Input Remarks] on the [Data] menu, and input a comment.
- * To delete a line from the defective pixel list, select the line to be deleted, and select [Delete] on the [Data] menu.
- To delete all the lines, select [All Delete] on the [Data] menu.
- * To create a new defective pixel list, select [New] on the [File] menu.

Click [New] on the [File] menu.

The defective pixel list, comments and filenames are all cleared.

Saving a defective pixel list in a file

- The displayed defective pixel list is saved in a file.
- The list is saved in the comma-delimited CSV format (with the .CSV extension).
- When [Save] on the [File] menu is selected:
- The data is saved in the selected file and any existing data in that file is overwritten.
- When [Save As] on the [File] menu is selected:
 - 1) The file selection dialog box appears.
 - 2) Input the filename, and press the [OK] button. The displayed defective pixel list is now saved in the new file.

Printing the defective pixel list

The displayed defective pixel list is printed.

- 1) Click [Print] on the [File] menu.
- 2) The print dialog box appears. Set the block numbers to be printed and the margins here.
- 3) Press the [OK] button. The displayed defective pixel list is now printed.
- 4) To change the printer which has been set, select the [Set Printer...] button.
- 5) The printer setting dialog box appears.

Closing the program

The program is closed by selecting [Close] on the [File] menu.

2.16.4. Menus

[File] menu

New	This is used to create a new defective pixel list.
Save	This is used to save the defective pixel list in a file.
Save	This is used to save the defective pixel list under a different filename.
Print	This is used to print the defective pixel list.
Close	This is used to close the program.

[Data] menu

Pixel	This is used to add dot defects to the defective pixel list.
Line	This is used to add line defects to the defective pixel list.
Uniformity	This is used to add lost uniformity to the defective pixel list.
etc.	This is used to add other defects to the defective pixel list.
Delete	This is used to delete the selected line of the defective pixel list.
All Delete	This is used to delete all the lines of the defective pixel list.
Input Remarks	This is used to input a comment on the selected line of the defective pixel list.

[VG] menu

Reset	This is used to retry communication.
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[Help] menu

Contents	This displays the help information.
Index	This displays a list of the help topics which can be searched.
About	This displays the version information.

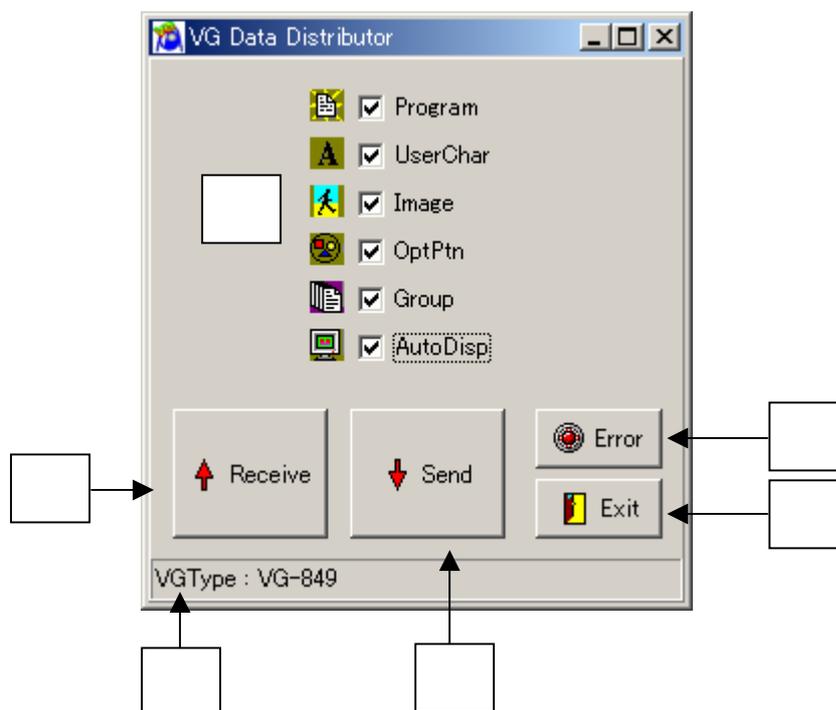
2.17. All data copy tool

All data of VG can be copied to the same model VG that are connected through LAN communication at once.

2.17.1. Startup method

Select the [Distributor] in [SP-8848] in [Program] of [start]

2.17.2. WINDOW SCREENS AND DESCRIPTION



No.	Item	Details
	Data selection	Select transmitting data
	Data reception	This function is to receive the data from VG that has original data. Press the "Receive" button and IP address(VG) which has been already set is displayed. Select the VG that has original data and the data is received. During the data reception, the dialog that shows progress bar, total numbers of copied file etc are displayed.
	Data send	This function is to send the data to the connected VG. The transmission starts by pressing the "Send" button. During the data transmission, the dialog that shows progress bar, total numbers of copied file etc are displayed.
	Status display	Display the VG type that has original data.
	Show error	The error is displayed.
	Exit	Close the distributor screen.

2.17.3. OPERATION

(1) Before startup

- 1) Set LAN communication and IP address (VG) in the screen of [Config] in [VG Base].
- 2) Use the same VG model, and the same IP address.
- 3) If the copied VG and copy to VG is not the same model, the data cannot be transferred.
- 4) The IP address which is set in No.1 in [Config] of [Base] are reflected.

(2) Startup

- 1) Connect LAN communication of copied VG and copy to VG.
 - 2) Connect PC to the copied VG and turn on each VG power.
 - 3) Start this program from the [start menu].
- * Do not turn off the power of VG during data transmission, otherwise the data may be broken.

(3) Select the transmission data

- 1) Select the check box of transmitting data.
- 2) Only checked data is transmitted.

(4) Data reception

Data is received from arbitrary VG.

- 1) Press the "Receive" button.
- 2) Selection screen of IP address(VG) is displayed. The IP address that has been set in [Config] of [VGBase] is displayed.
- 3) Press "OK" button and data reception starts.
- 4) The screen shows the data is receiving.
- 5) When completing the data reception, the reception screen ends.

(5) Data transmission

Data is transmitted to the same VG model that is connected through LAN communication.

- 1) Select the sending data. If selecting un-received data, the data is not transmitted.
- 2) Press the "Send" button, and the screen shows the data is sending.
- 3) When completing the data transmission, the transmission screen ends.

* The first set IP setting is reflected for data transmission. If the first IP setting of VG is set as Class C, the data is transmitted only to the VGs whose class is set as C.

e.g.) Suppose the data is set as below in [VGBase]→[Config]→[Interface]→ [VG(LAN)].

No.	VGName	IP address	Setting of IP address
1	VG1	192.168.16.54	Class C
2	VG2	192.168.16.55	Class C
3	VG3	192.255.255.255	Class A
4	VG4	172.16.255.255	Class B
5	VG5	192.168.16.60	Class C

In this case, the IP address that is set in No. 1 is Class C, the data is transmitted only to VG1, VG2 and VG5 whose IP address is set as Class C. The data is not transmitted to VG3 and VG4, since they are set as different class.

(6) Error status

The VG that occurs transmission error and error contents are displayed.

(7) Program ends

Press [Exit] button and the program closes.

2.18. ClosedCaption/V-chip data transmission tool

Described here are the steps taken to send the closed caption data and V-chip data to the VG generator or receive the data from the VG generator and also to save the data settings in files.

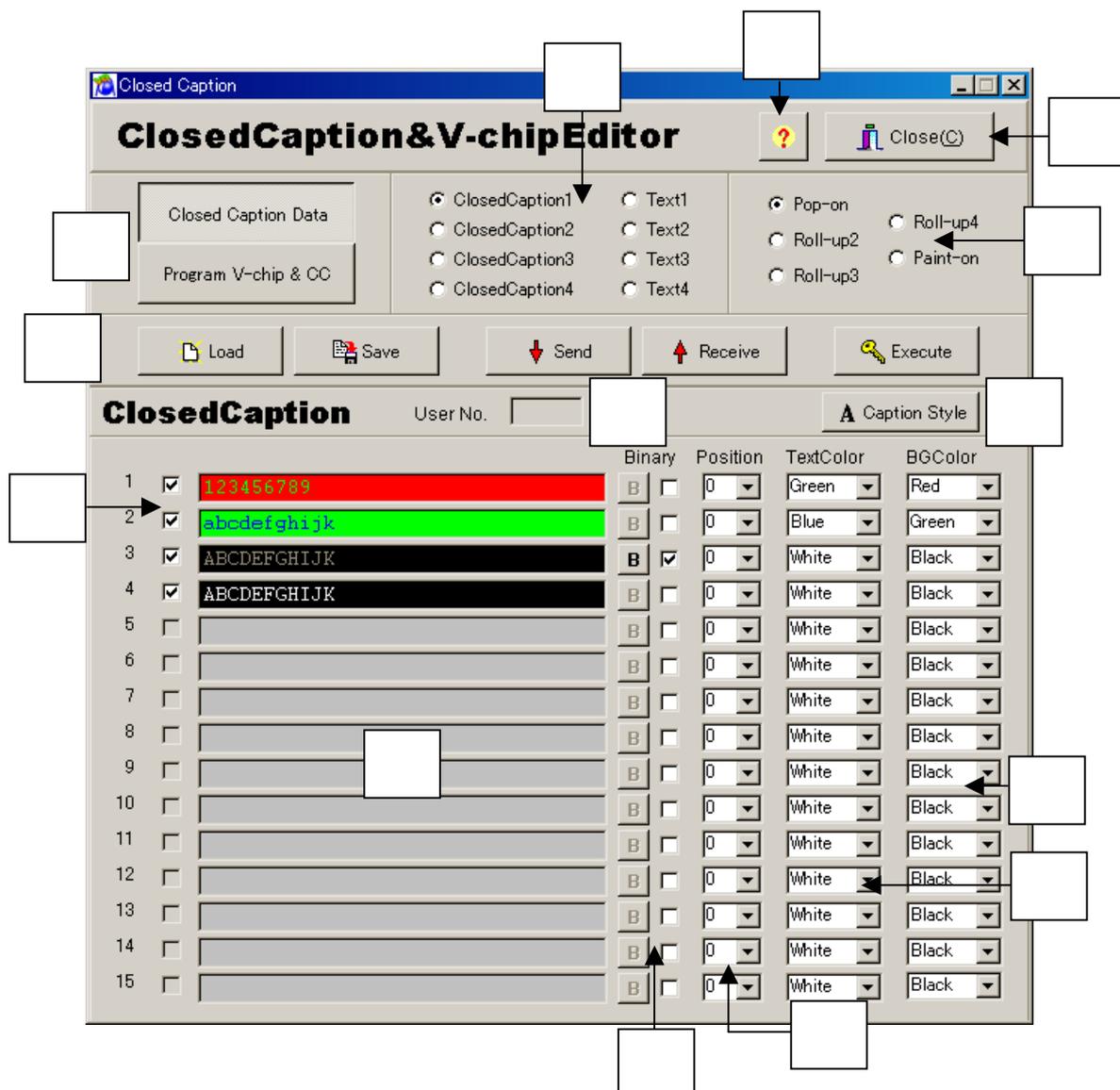
* This tool can be used with VG-848,858,849,859,849C,859C.

2.18.1.Startup method

Select [Start] - [Programs] - [SP-8848] - [CCVEdit].

2.18.2. Window screen displays and descriptions

Caption data setting screen

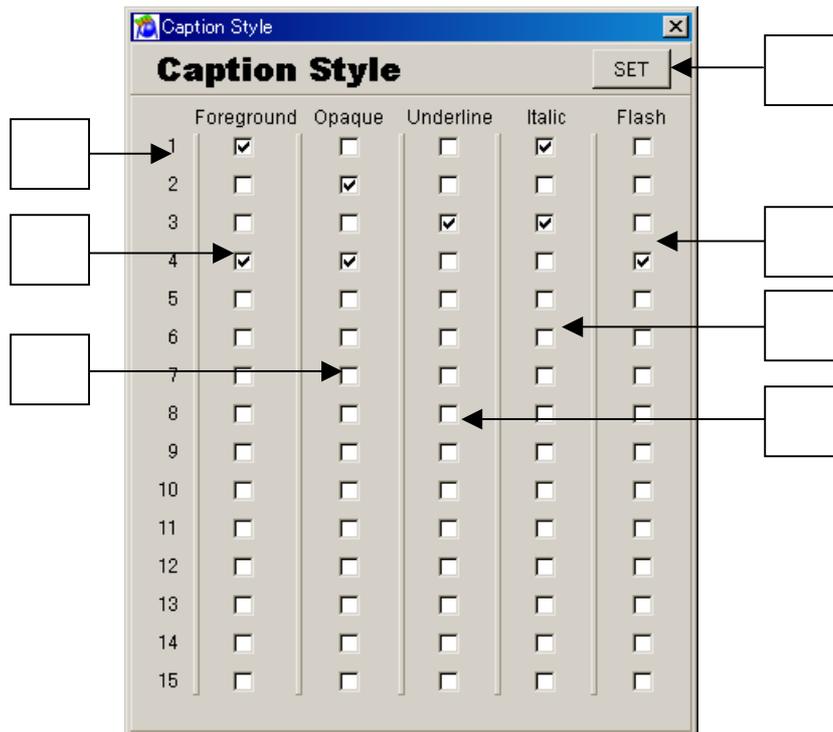


Caption setting screen

No.	Item	Details
	V-chip setting display	This button is used to display the V-chip setting screen.
	CC mode settings	These are used to select closed caption mode 1, 2, 3 or 4 or select text mode 1, 2, 3 or 4. When a text mode has been selected, the text setting screen is displayed.
	CC style settings	These are used to set the caption data style. Depending on the style setting, the number of caption data which can be set varies. Roll-up2, 3 or 4: 2, 3 or 4 rows can be edited. The rows selected must be consecutive. Pop-on, Paint-on: Up to four rows can be edited. Any rows can be selected.
	Tool buttons	Load: Press this to load the data from a file. Save: Press this to save the edited data in a file. Send: Press this to send the edited data to the VG generator, and register it in the generator. Receive: Press this to receive data from the VG generator. Execute: Select UserNo. from the registered ClosedCaption data and execute it.
	CaptionStyle setting	This is used to display the font data and background Style setting screen.
	UserNo	The pattern number of the sent or received caption data appears here.
	ROW	When a row box is checked, data can be set on that row. The selection method differs depending on the style set.
	Caption setting screen	Input the Caption data. The text data should be ASCII letters of 20h to 7Fh. Control data cannot be inputted. Use binary editor when inputting the control data. *1
	Binary editor display	Check it and the buttons can be selected. Press the button and the binary editor starts. The setting Caption data is binary-displayed. On the contrary, the value that is edited by the binary editor can be set in the editor. If Binary is checked, caption data input editor cannot be used.
	Position	The positions at which the text data is to be input are set here.
	Text color settings	The text colors are set here. White, red, green, blue, cyan, yellow or magenta can be selected.
	BG color settings	The background colors are set here. White, black, red, green, blue, cyan, yellow or magenta can be selected.
	Help	This is pressed to display the help information.
	Close	This is pressed to close the program.

***1 After editing the control code by Binary editor, if character code is re-edited by Caption editor, the control code that exists in the re-edited Caption data is all delted.**

FontStyle setting screen



FontStyle setting screen

No.	Item	Details
	SET	This is pressed to set the FontStyle data which has been checked.
	No	These are the numbers of the rows in which the settings are to be reflected.
	Foreground	Makes the checked Caption foreground. * Invisible on the application.
	Opaque	When one of these boxes is checked, the background becomes opaque. This cannot be verified due using the application.
	Underline	When one of these boxes is checked, Font is underlined.
	Italic	When one of these boxes is checked, the font is italicized.
	Flash	When one of these boxes is checked, the flashing is set to ON. This cannot be verified using the application.

Text data setting screen

ClosedCaption&V-chipEditor

ClosedCaption1 Text1
 ClosedCaption2 Text2
 ClosedCaption3 Text3
 ClosedCaption4 Text4

TextEditor User No.

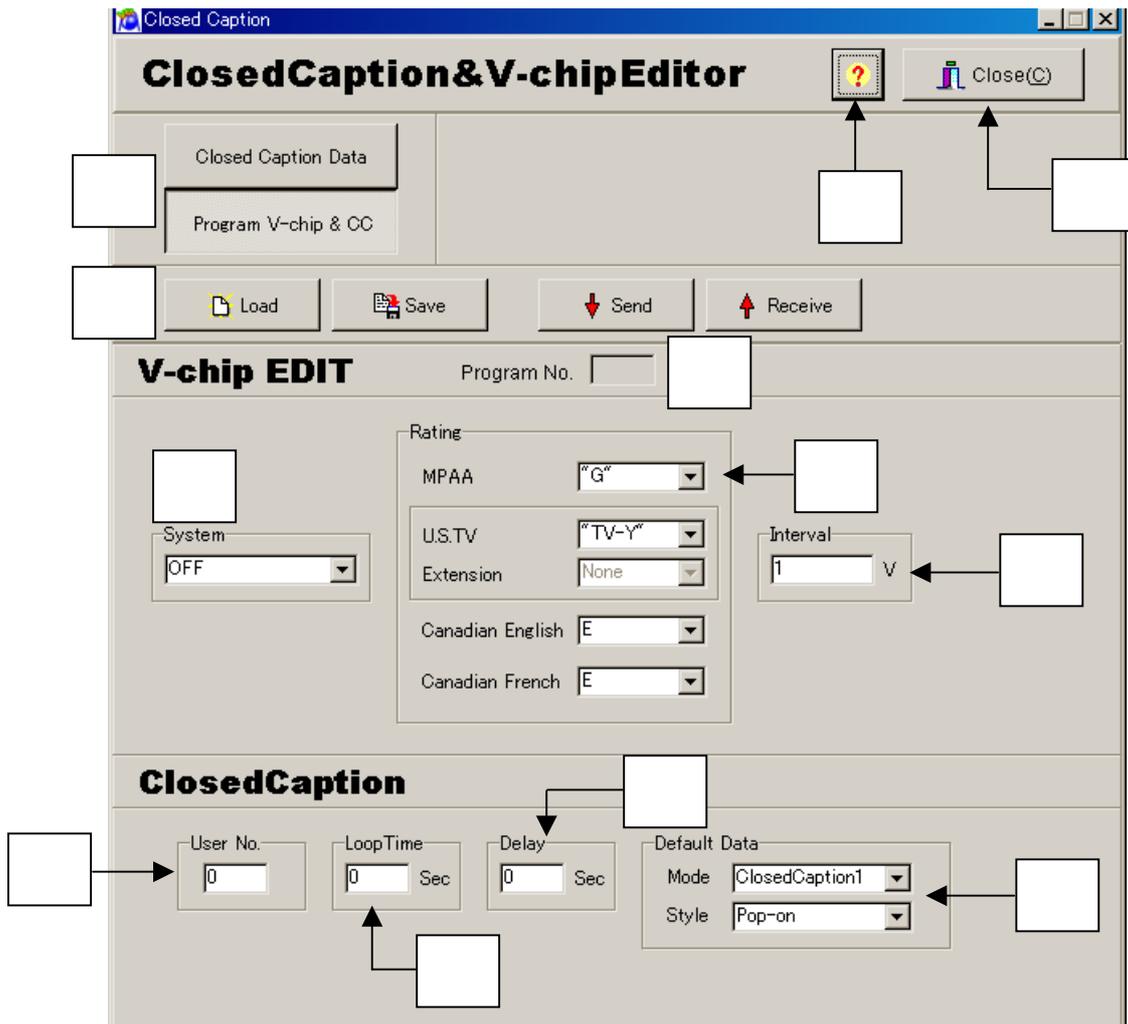
Article Name	Binary
1 123456789	B <input type="checkbox"/>
2 abcdefghijk	B <input type="checkbox"/>
3 ABCDEFGHIJK	B <input checked="" type="checkbox"/>
4 ABCDEFGHIJK	B <input type="checkbox"/>
5	B <input type="checkbox"/>
6	B <input type="checkbox"/>
7	B <input type="checkbox"/>
8	B <input type="checkbox"/>
9	B <input type="checkbox"/>
10	B <input type="checkbox"/>
11	B <input type="checkbox"/>
12	B <input type="checkbox"/>
13	B <input type="checkbox"/>

Text setting screen

No.	Item	Details
	V-chip setting display	This button is used to display the V-chip setting screen.
	CC mode settings	These are used to select closed caption mode 1, 2, 3 or 4 or text mode 1, 2, 3 or 4. When a text mode has been selected, the text setting screen is displayed.
	Tool buttons	Load: Press this to load the data from a file. Save: Press this to save the edited data in a file. Send: Press this to send the edited data to the VG generator, and register it in the generator. Receive: Press this to receive data from the VG generator. Execute: Select UserNo. from the registered ClosedCaption data and execute it.
	UserNo	The pattern number of the sent or received text data appears here.
	ArticleName	The article name appears here.
	Text	Input the Text data. The text data should be ASCII letters of 20h to 7Fh. Control data cannot be inputted. Use binary editor when inputting the control data. *1
	Binary settings	Check it and the buttons can be selected. Press the button and the binary editor starts. The setting Caption data is binary-displayed. On the contrary, the value that is edited by the binary editor can be set in the editor. If Binary is checked, caption data input editor cannot be used.
	Help	This is pressed to display the help information.
	Close	This is pressed to close the program.

***1 If a Text editor performs the reorganization collection of a character code after editing a control code by the binary editor, all the control codes that exist in the Caption data which carried out the reorganization collection will be deleted.**

V-chip setting screen



V-chip Setting screen

No.	Item	Details
	CC setting display	This is pressed to display the closed caption setting screen.
	Tool buttons	<p>Load: Press this to load the data from a file.</p> <p>Save: Press this to save the edited data in a file.</p> <p>Send: Press this to send the edited data to the VG generator, and register it in the generator.</p> <p>Receive: Press this to receive data from the VG generator.</p>
	Program No	The number of the program which has been sent or received appears here.
	System	This is where the system setting is selected. OFF,MPAA, U.S. TV, Canadian English or Canadian French can be set.
	Rating	<p>This is where the rating classifications are set. The items which can be set differ depending on the system.</p> <p>MAPP: G., PG, PG-13, R, NC-17, X</p> <p>U.S.TV: TV-Y, TV-Y7, TV-G, TV-PG, TV-14, TV-MA</p> <p>English: E, C, C8+, G, PG, 14+, 18+</p> <p>French: E, G, 8ans+, 13ans+, 16ans+, 18ans+</p> <p>This is where the U.S. TV extension system is selected. None, FV, V, S, L or D can be set.</p>
	Interval	This is where the interval at which the rating data is to be sent is set. Any interval from 0 to 1023 (v) can be set
	UserNo	The closed caption pattern number is set here.
	LoopTime	Displays the caption data that was looped by every setting value. Any LoopTime from 0 to 10 seconds can be set.
	Delay	Starts the display of the Caption data after the fixed time. Any Delay from 0 to 10 seconds can be set
	DefaultData	Select the Mode and Style settings for the default caption data output.
	Help	This is pressed to display the help information.
	Close	This is pressed to close the program.

* For further details on the settings, refer to the instruction manual of the VG generator (VG-858).

2.18.3. Operation method

ClosedCaption

- (a) Closed captions
Start up the program. The closed caption setting screen is the first screen to appear after startup.
- (b) Select the closed caption mode style. The number of rows of data which can be edited differs depending on the selected style.
- (c) Enter a check mark in the **ROW check box** corresponding to the row to be edited. Data can now be written into the editor area which has been checked.
- (d) Write the data in the editor area. Up to **32 characters** can be written on each row.
- (e) Set the text and background colors. To change the text style, press the **DataEdit button** to open the **FontStyleEditor** screen, enter check marks in the boxes of the setting items, and press the **SET button**.
- (f) In cases where characters containing control data are to be set, for instance, use the binary editor to perform the settings.
- (g) When the binary editor is to be used for editing, press the **B** button alongside the row in which the data is to be written, and open the binary editor.
- (h) If the row to be edited already contains some data when the binary editor is opened, the data on the row will be displayed on the binary editor screen.
- (i) Upon completion of the editing using the binary editor, press the **SET button**. The binary data is converted into ASCII characters and displayed. However, "." appears for each control data.
- (j) Press the **Send button**, select the VG generator serving as the sending destination and UserNo, and send the data.

Text

- (a) When one of the text settings is selected using the CC mode setting radio buttons, the corresponding text mode screen is displayed.
- (b) Input the article name and text data in the editor area.
- (c) When a check mark is placed in the Binary check box alongside the text data input field, the data is processed as binary data by the VG generator to which the data was sent.
- (d) Press the **Send button**, select the VG generator serving as the sending destination and UserNo, and send the data.

EDS (V-chip)

- (a) Press the **V-chip & CCNo** button. The V-chip setting screen now appears.
- (b) Select the System setting.
- (c) Select the Rating settings. Bear in mind that the rating items which can be set differ depending on the System setting selected. Operation is not executed if wrong Rating items have been set.
- (d) When "U.S. TV" has been selected as the System setting, a setting can be selected for Extension (extension system). If nothing is to be selected here, set "None."
- (e) Select the Interval setting in 0.1 second increments.
- (f) Select the execution time in 1 second increments.



3

10bit Image data

3.1. 10bit Image data

10bit image data of the yacht harbor who shows in the figure below is appended to SP-8848.
The resolution becomes 1920x1080.



Caution

A copyright of yacht harbor of an upper figure belongs to "corporate judicial person Institute of Image Information and Television Engineers".



4

Error message reference

Error message	Code (HEX)	Description of error
Panel ROM Unsetted	00	The EE-PROM has not been inserted into the panel ROM socket or the memory card has not been installed.
Prog No Disabled	01	The number of the program which was input turns out to have been set to "Disable" when direct display or a program is executed.
DotClk over	02	DotClock in the horizontal timing data is outside the specified range.
Hfp over	03	The front porch in the horizontal timing data is outside the specified range. (Hperiod \geq Hsync + Hbackp + Hdisp)
HD over	05	HDstart + HDwidth in the horizontal timing data is outside the specified range. (Hperiod \geq HDstart + HDwidth)
Hperiod over	07	HPeriod in the horizontal timing data is outside the specified range.
Hdisp over	08	Hdisp in the horizontal timing data is outside the specified range.
Hsync over	09	Hsync in the horizontal timing data is outside the specified range.
Hbp over	0A	Hbackp in the horizontal timing data is outside the specified range.
Hblank over	0B	The blanking period in the horizontal timing data is outside the specified range.
Hfreq over	0C	The horizontal frequency in the horizontal timing data is outside the specified range.
H-TIM data NG	0D	Error other than those described above in the horizontal timing data.
OUTPUT data error	10	Error in the output condition data.
CHR data error	11	Error in the CHARA pattern data.
CROSS data error	12	Error in the CROSS pattern data.
DOTS data error	13	Error in the DOTS pattern data.
CRCL data error	14	Error in the circle pattern data.
BRST data error	15	Error in the burst pattern data.
WIND data error	16	Error in the window pattern data.
COLBAR data error	17	Error in the color bar pattern data.
PARAMETER error	18	Error in a parameter in the terminal mode.
DATA error	19	Error in the data in the terminal mode.
SYNC data error	1A	The sync signal has not been set.
COMM. Timeout	1E	Time-out has occurred during communication in the terminal mode.
Undef Command	1F	An undefined command was received in the terminal mode.
V-Sync Timeout	20	Time-out has occurred during V sync interrupt wait.
Prog-NO error	21	Error in the program number.
Group-NO error	22	Error in the group number.
User-CHR code error	23	Error in a user character code.
EEPROM write error	24	An EEPROM write error has occurred.
M-Card Type error	25	The memory card is not the correct type.
M-Card Write error	26	A memory card write error has occurred.
M-Card W-Protected	27	The memory card has been set to the write protect status.
M-Card Not Set	28	The memory card has not been installed.
M-Card UnFormatted	29	The memory card has not been formatted.
M-Card Full	2A	There is no free space on the memory card.
OPT PTN No error	2B	Error in the optional pattern number.

OPT PTN FAT error	2C	Error in user-generated optional pattern FAT.
OPT PTN Not Registered	2D	No user-generated optional patterns have been registered.
BMP data No error	2E	Error in the image data number.
BMP data FAT error	2F	Error in image data FAT.
BMP data Not Registered	30	The image data has not been registered.
Cur-DEV Incorrect	31	Illegal current data device (memory card or EEPROM).
Key Not Available	32	The function cannot be used because the key lock function is activated.
CURSOR Not Selected	33	The cursor pattern has not been selected.
OPT-0E(DDC) Disabled	34	The DDC optional pattern is invalid.
Flash ROM write error	35	A flash ROM write error has occurred.
GRAY data error	38	Error in the gray scale pattern data.
OPT-PTN data error	39	Error in the optional pattern data.
HALFTONE data error	3A	Error in the half-tone pattern data.
CURSOR data error	3B	Error in cursor pattern data.
PrgName data error	3C	Error in the program name data.
GCOLOR data error	3D	Error in the graphic color data.
ACTION data error	3E	Error in the action data.
Vtotal over	40	Vtotal in the vertical timing data is outside the specified range.
Vdisp over	41	Vdisp in the vertical timing data is outside the specified range.
Vsync over	42	Vsync in the vertical timing data is outside the specified range.
Vbp over	43	Vbackp in the vertical timing data is outside the specified range.
Vfp over	44	The front porch in the vertical timing data is outside the specified range. (Vtotal \geq Vsync + Vbackp + Vdisp)
Vblank over	45	The blanking period in the vertical timing data is outside the specified range.
Vfreq over	46	The vertical frequency in the vertical timing data is outside the specified range.
VD over	47	VDstart + VDline in the vertical timing data is outside the specified range. (Vtotal \geq VDstart + VDline)
EQPfp over	48	EQPfp in the vertical timing data is outside the specified range.
EQPbp over	49	EQPbp in the vertical timing data is outside the specified range.
V-TIM data NG	4A	Error other than those described above in the vertical timing data.
DDC1 Timeout	4B	A timeout has occurred in DDC1.
DDC1 ACK error	4C	An ACK error has occurred in DDC1.
DDC2 ACK error	4E	An ACK error has occurred in DDC2.

The following errors may occur when user-generated optional patterns are executed.

Error message	Code (HEX)	Description of error
OPT-Prog. not Exist	81	The user-generated optional pattern does not exist.
Variables Stack Err	82	Variable stack error.
Register Stack Err	83	Register stack error.
Call Stack Error	84	Function stack error.
Illegal Instruction	85	Illegal instruction code.
Divide by Zero	86	An attempt was made to divide a number by zero.
Math Error	87	An error has occurred in a floating decimal point calculation.

SP-8848

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