VBS input module

IM-581

User's Manual

Ver.1.00

VBS input module

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User's Manual

2005.10

Ver.1.00

ASTRODESIGN,Inc

Table of Contents

Introduction

Thank you for purchasing the IM-581 VBS I IN module.
This document describes the functions and operating method of the IM-581, as well as the precautions to observe when using it. Be sure to read this document before using the IM-581 since improper use may result in accidents.
After reading, please retain this document in a safe place for future reference.

Safety Precautions

⚠ Warning

Avoid contact with foreign substances

- **Do not spill liquid or drop a flammable substance or metal inside the module. Usage under such conditions may result in fire, electrical shock or malfunction.**

Do not disassemble

- **Do not attempt to disassemble this module. To avoid the risk of electrical shock or injury to the user, or malfunction of the module, do not open the case or remove/reinstall the internal board.**

⚠ Caution

Handling of the module

- **The module consists of precision components; handle it with extreme care.**
- **To avoid the risk of electrical shock, injury, or malfunction, do not remove or add a module while the power is on.**
- **When removing the module, be careful to avoid brushing your hand against the connectors.**

Avoid mechanical shock and impact

- **The module is a precision instrument that may be damaged by mechanical shock and impact. Be extremely careful when transporting the module.**
- **Do not drop the module.**

In case of an abnormality or malfunction

- **If an abnormality of malfunction occurs, unplug the power cord and then contact your local dealer or the ASTRODESIGN sales group.**

Concerning the use of this unit

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1 Edition revision history

Ver.	Date	Page	Item no.	Description
1.00	2005/08/18			Initial edition

2 About the IM-581

2.1 Overview

The IM-581 is an VBS input module which is equipped with 480i-59.94 component [Y(R-Y)(B-Y)], NTSC/PAL composite [VBS] and Y/C [S-connector] connectors and which is installed in the SC-2055 series (2 inputs, 2 outputs). Connectors are provided for one component input channel, one composite input channel and one Y/C input channel.

2.2 Limitations due to the specifications

The SC-2055 has certain limitations which, when exceeded, may cause the images shown on the output screen to be disturbed.

In cases like this, since restrictions due to characteristics also affect the unit's functions, take the appropriate precautions when using the unit.

- Only the Y/R-Y/B-Y (Betacam/480i-59.94) format is supported for component input signals. The Y/Cb/Cr (SMPTE125M) format is not supported. When PAL signals are to be input, use the Y/C and composite channels.
- When VTR and other poor-quality signals are input, they may not be displayed properly.
- When video signals with DVD or other copy-protected signals superimposed onto them have been input, they may not be displayed properly.
- When IM-581 input module sync signals and output module sync signals are locked internally, they may not be locked properly depending on the quality of the input video signals. Use external locking signals supplied to the REF connector instead.

3 Names and Functions of Individual Components

3.1 IM-581 rear panel view and component names

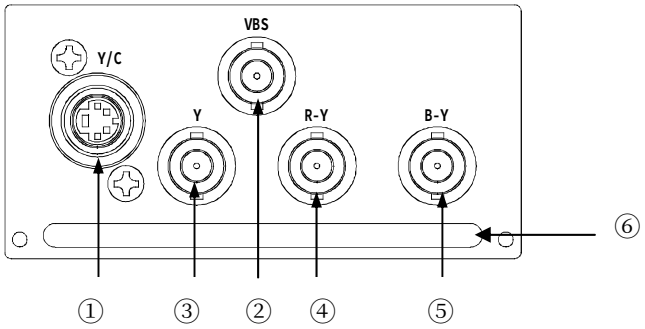


Fig. 3.1 IM-581 Rear Panel View

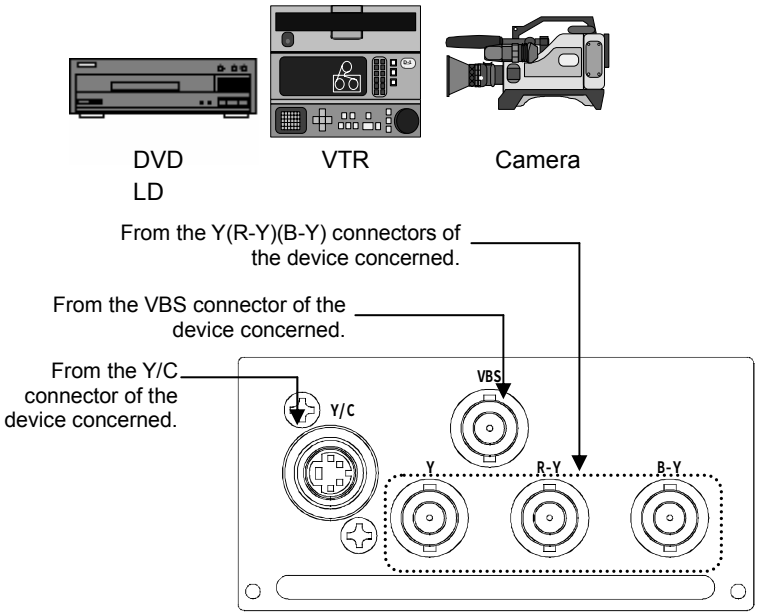
Table 3.1 Names of Rear Panel Parts

No.	Name of part	Description
①	Y/C input connector	This is the Y/C video signal (S-VIDEO) input connector (S-connector).
②	VBS input connector	This is the composite video signal (VIDEO) input connector (BNC connector).
③	Y input connector	This is the component video signal Y video input connector (BNC connector).
④	R-Y input connector	This is the component video signal R-Y video input connector (BNC connector).
⑤	B-Y input connector	This is the component video signal B-Y video input connector (BNC connector).
⑥	Handle	This is used when plugging in or unplugging the module.

4 Connecting the Module

4.1 Connecting the input signal

The output signals of the DVD or other device are connected to the INPUT connector on the IM-581 as shown in the figure below.



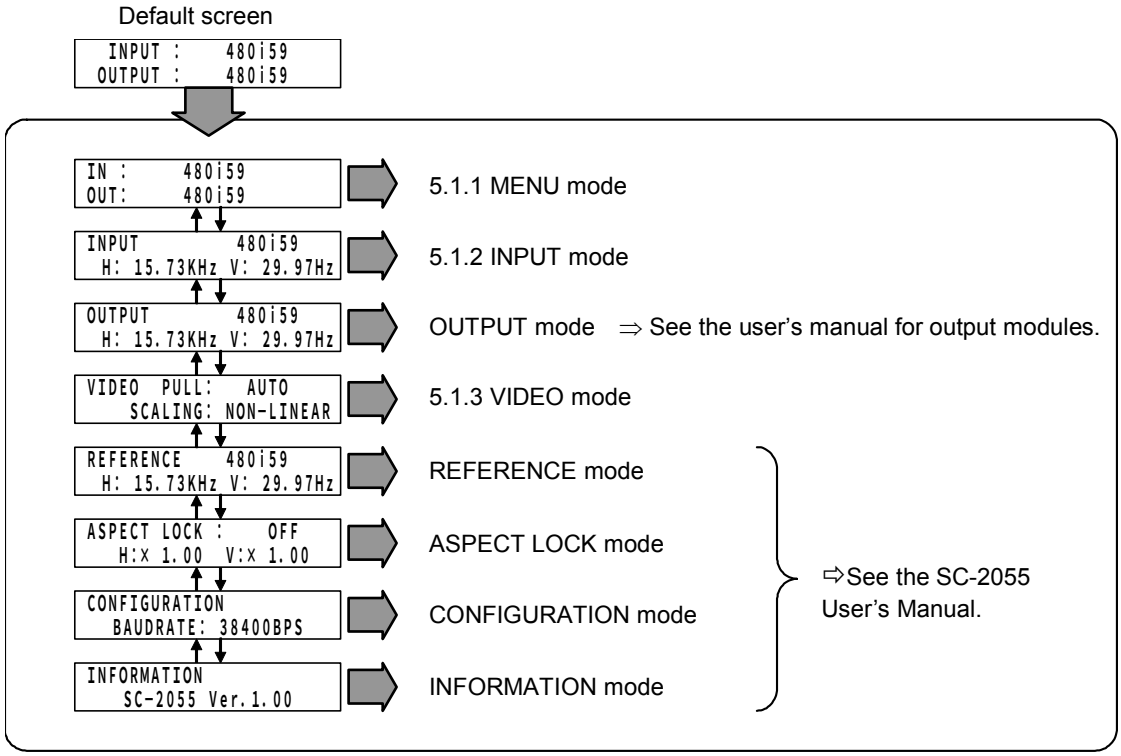
5 Adjustments and Settings

5.1 Menu structure

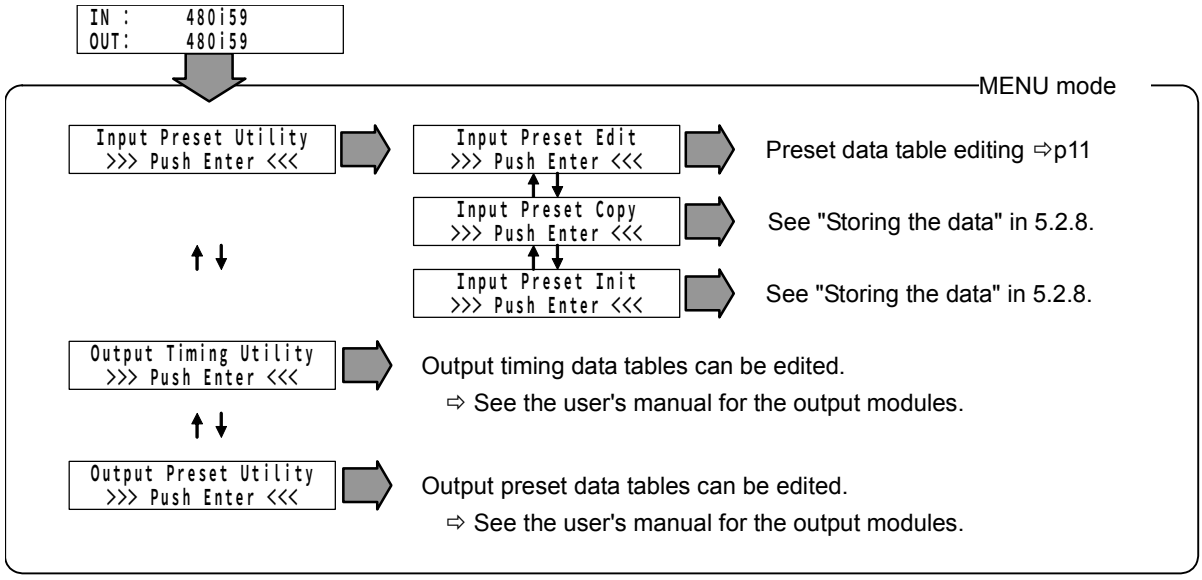
From the default screen, push the rotary encoder to enter the menu structure described below.
For the operation method, see the SC-2055 User's Manual.

Symbols are defined below.

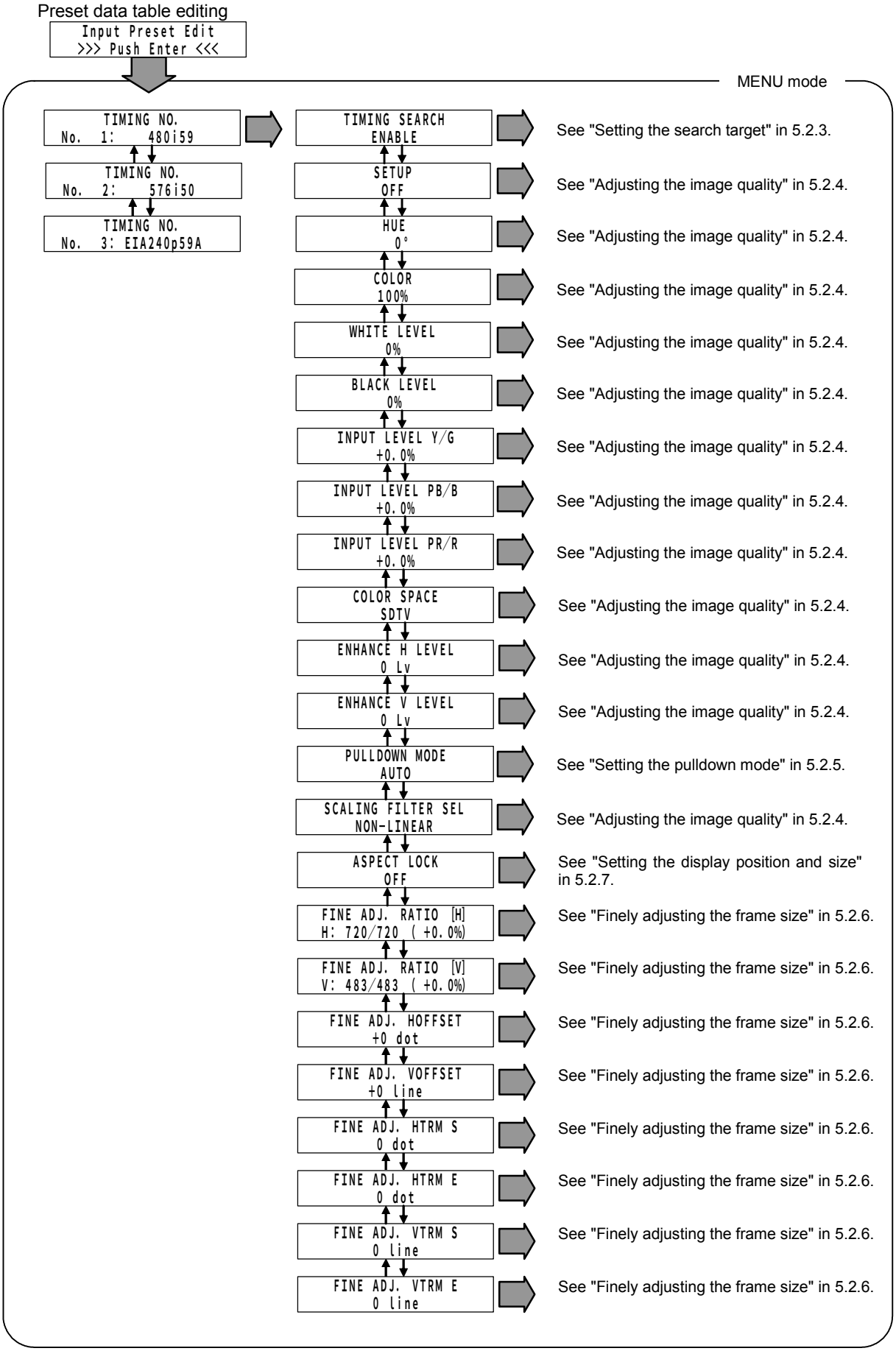
⇩ ⇨	PUSH operation
↑ ↓	Rotate operation



5.1.1 MENU mode

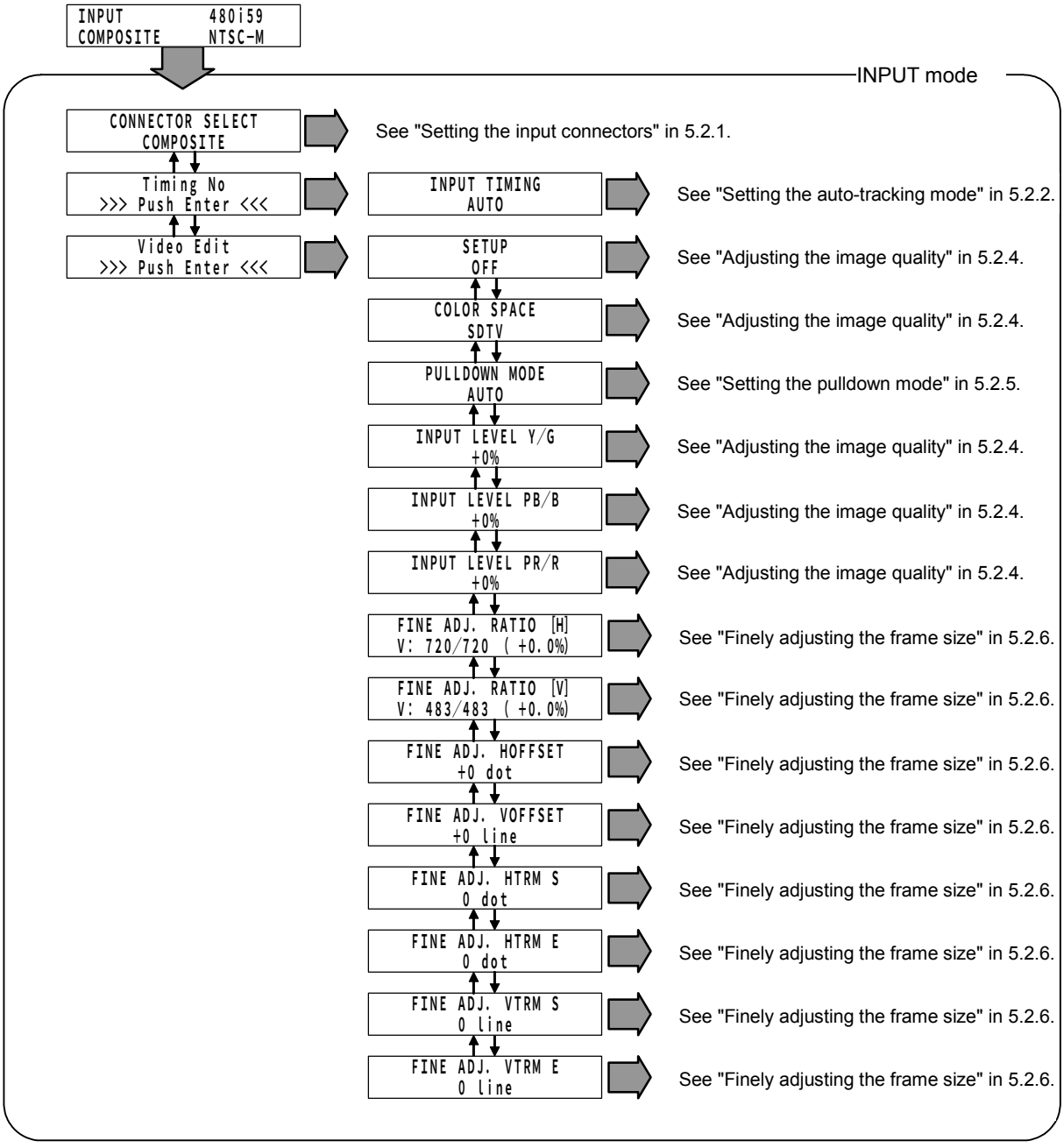


Preset data table editing



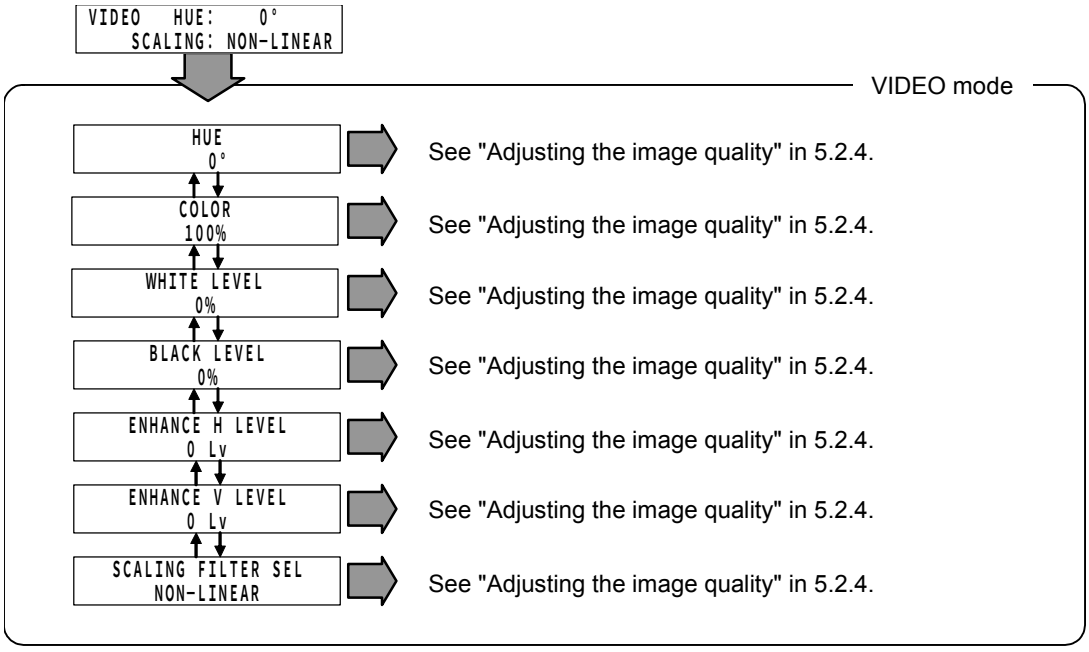
5.1.2 INPUT mode

The default screen of the INPUT mode displays the selected input timing.



5.1.3 VIDEO mode

The hue and scaling filter settings are displayed on the default screen in the VIDEO mode.



5.2 Setting parameters

5.2.1 Setting the input connectors

The parameter in this section is used to set the input connectors.

Setting Parameter	Description	Setting Value	Comments
CONNECTOR SELECT	Input connector setting	AUTO※1 Y/R-Y/B-Y Y/C COMPOSITE	This parameter is used to set the input connectors.

*1: When AUTO has been selected as the parameter setting, whether sync signals are present or absent is detected, and the input connectors are selected automatically in the following sequence of priority: <1> Y/R-Y/B-Y -> <2> Y/C -> <3> COMPOSITE.
When the PUSH operation is conducted on the AUTO setting display screen, the connectors are automatically detected again.

5.2.2 Setting the auto-tracking mode

Sets the input timing.

Setting Parameter	Description	Setting Value	Comments
INPUT TIMING	Auto Tracking Mode	AUTO/ Timing name ※1	Sets the auto-tracking mode.

*1: The number of timing names that can be selected differs according to the input module type.

5.2.3 Setting the search target

The parameter in this section is used to set whether items are to be targeted by the searches during auto-tracking.

Setting Parameter	Setting Value	Comments
TIMING SEARCH	ENABLE	Targeted for auto-tracking searches.
	DISABLE	Not targeted for auto-tracking searches.

5.2.4 Adjusting the image quality

Adjusts image quality and sets parameters related to video display.

Setting Parameter	Description	Setting Value	Comments
SETUP	Setup setting	ON/OFF	This parameter is used to set the input video setup.
HUE	Hue adjustment	-180 to +180 ° (in 1-degree increments)	This parameter is used to adjust the hue.
COLOR	Color adjustment	0 to 150% (in 1% increments)	This parameter is used to adjust the color contrast.
WHITE LEVEL	White level adjustment	-30 to +30% (in 1% increments)	This parameter is used to adjust the white areas (white level) of the entire screen.
BLACK LEVEL	Black level adjustment	-30 to +30% (in 1% increments)	This parameter is used to adjust the reference level (black level) of the brightness on the entire screen.
INPUT LEVEL Y/G	Input video level (Y/G) adjustment	-30 to +30% (in 0.1% increments)	This parameter is used to adjust the input video level.
INPUT LEVEL PB/B	Input video level (PB/B) adjustment	-30 to +30% (in 0.1% increments)	This parameter is used to adjust the input video level.
INPUT LEVEL PR/R	Input video level (PR/R) adjustment	-30 to +30% (in 0.1% increments)	This parameter is used to adjust the input video level.
COLOR SPACE	Color space system setting	SDTV/HDTV/ HDTV1035	This parameter is used to set the color space system.
ENHANCE H LEVEL	Enhanced H setting	Level 0 to 15	This parameter is used to control the frequency characteristics of the images and adjust the enhancement of the frame.
ENHANCE V LEVEL	Enhanced V setting	Level 0 to 15	This parameter is used to control the frequency characteristics of the images and adjust the enhancement of the frame.
SCALING FILTER SEL	Scaling filter selection	PIXEL/LINEAR/ NON-LINEAR	This parameter is used to set the scaling filter.

5.2.5 Setting the pulldown mode

Automatically identifies 24/30 frame video data such as video signals from film and computer graphic sources.

Setting Parameter	Setting Value	Comments
PULLDOWN MODE	AUTO	Automatically identifies which pulldown mode (VIDEO, 22PULLDOWN or 32PULLDOWN) is appropriate for the video source.
	VIDEO	This mode converts a normal interlaced motion picture video signal into a progressive signal.
	22PULLDOWN	For a still image video source, such as a source that reproduces a 1 frame image with even and odd fields, this mode automatically detects and displays a 2-2, 2-2 pulldown pattern from the flow of images on the screen.
	32PULLDOWN	For the video source of a motion picture signal (24 frames per second) converted to a video signal (60 fields per second), this mode automatically detects and displays a 2-3, 2-3, 2-3 pulldown pattern from the flow of images on the screen.

Note

When using 22PULLDOWN or 32PULLDOWN, the video signals may be disturbed if the setting does not match the interpolation pattern of the input video source. In a case like this, use VIDEO instead.

5.2.6 Fine adjustment of the frame size

Finely adjusts the size of the image to be displayed.

Setting Parameter	Description	Setting Value	Comments
FINE ADJ. RATIO [H]	Zoom ratio [H]	±30% of H ACTIVE at input timing	Adjusts the zoom ratio with the horizontal active width. * 1
FINE ADJ. RATIO [V]	Zoom ratio [V]	±30% of V ACTIVE at input timing	Adjusts the zoom ratio with the vertical active width. * 1
FINE ADJ. H OFFSET	Offset [H]	-127 to +127	Sets the horizontal offset.
FINE ADJ. V OFFSET	Offset [V]	-31 to +31	Sets the vertical offset.
FINE ADJ. H TRM S	H trimming Start position	0 to 128	Sets the horizontal trimming start position. * 2
FINE ADJ. H TRM E	H trimming End position	0 to 128	Sets the horizontal trimming end position. * 2
FINE ADJ. V TRM S	V trimming Start position	0 to 32	Sets the vertical trimming start position. * 3
FINE ADJ. V TRM E	V trimming End position	0 to 32	Sets the vertical trimming end position. * 3

*1: MIN and MAX values differ according to the input timing.
*2: If the input timing scanning method is progressive and the pixel clock is □74.25MHz, settings are in 1-dot increments. In all other cases, settings are in 2-dot increments.
*3: If the input timing scanning method is progressive, settings are in 1-line increments. If the input timing scanning method is interlace or segment-frame, settings are in 2-line increments.

5.2.7 Setting the display position and size

Changes the image display size and specifies the display position.

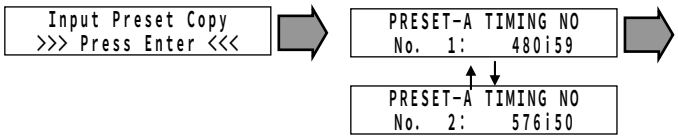
Parameter	Description	Setting Value	Comments
ASPECT LOCK	Aspect setting	OFF/V JUST/ ARIB 13:9/ARIB 14:9/ ARIB 15:9/H JUST	Sets the image frame size.

5.2.8 Storing the data

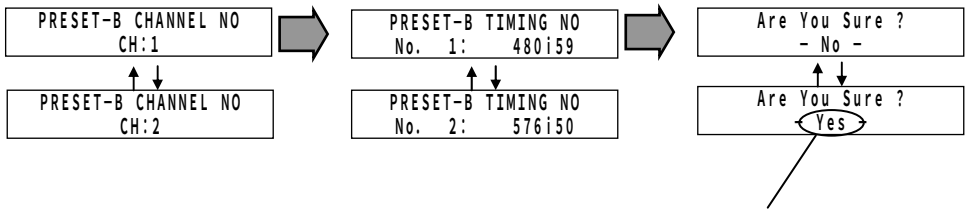
The parameters in this section enable data to be copied or initialized.

Setting Parameter	Setting Value	Comments
Input Preset Copy	Preset data copying	This parameter is used to copy preset data into empty tables. Data cannot be copied if it involves overwriting already existing data in a table.
Input Preset Init	Preset data initialization	This parameter is used to initialize the preset data to the factory data.

(1) Select copy menu. → Select copy source timing data.



(2) Select copy destination channel. → Select copy destination preset data. → Confirm and enter.



When the rotary encoder is pressed at "Yes," the data is copied.

⇨ See "MENU mode" in 5.1.1 on page 10.

6 Timing Table List

6.1 Input timing table

No	Format	Clock (MHz)	Htotal (dot)	Hactive (dot)	Hcync (dot)	Hbp (dot)	Vtotal (line)	Vactive (line)	Vsync (line)	Vbp (line)	Scan
1	480i59	13.50	858	720	63	59	525	483	6	30	Interlace
2	576i50	13.50	864	720	63	69	625	576	5	39	Interlace
3	EIA240p59A	13.50	858	720	62	57	263	240	3	15	Progressive

7 Main Specifications

71 Specifications

Table 7.1 IM-581 Specifications

Component signals: Y(R-Y)(B-Y)

Item		Specifications
Timing system		480i-59
Video signals	Video data resolution	10 bits
	Video level	Y(R-Y)(B-Y)/75 ohms (setup ON/OFF)
	Number of channels	1 system (BNC connectors × 3)
Sync signal	Y-ON	0.286 Vp-p/75 ohms (negative polarity)

Composite signal: VBS signal

Item	Specifications
TV system	NTSC-M/PAL-B/PAL-D/PAL-G/PAL-H/PAL-I
Signal system	Composite signal (VIDEO) 1.0 Vp-p fixed (including sync signal)/75 ohms
Connector	1 system (BNC connector × 1)

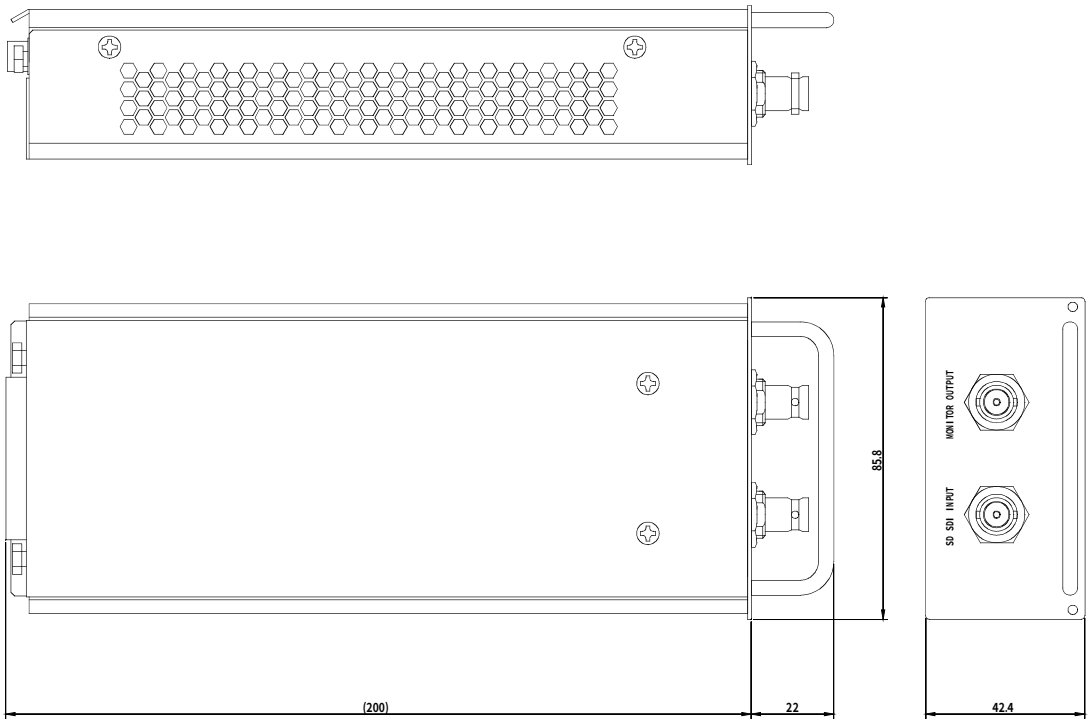
Y/C signal

Item	Specifications
TV system	NTSC-M/P/L-B/PAL-D/PAL-G/PAL-H/PAL-I
Signal system	Y/C signal (S-VIDEO) Y signal: 1.0 Vp-p fixed (including sync signal)/75 ohms C signal: 0.286 Vp-p fixed/75 ohms
Connector	1 system (BNC connector × 1)

7.2 Accessory

User's Manual	1 copy

7.3 Outline Drawing



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