DM-3005A

HD LCD PICTURE MONITOR

Instruction Manual

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ASTRODESIGN, INC.

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INTRODUCTION

Thank you very much for purchasing this model DM-3005A HD LCD picture monitor. This manual contains details on the operation procedures to be followed when the DM-3005A is used, the checkpoints and precautions to be observed, and so on.

Improper handling may result in malfunctioning. Before using the DM-3005A, please read through these instructions to ensure that you will operate the monitor correctly.

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

SAFETY PRECAUTIONS

⚠ WARNING

CONCERNING THE MONITOR

- Do not subject the monitor to strong shocks or throw it around. Doing so may cause the liquid crystal to leak and/or the monitor to malfunction, rupture, generate heat and cause a fire.
- Do not use the monitor wherever there is a risk of ignition or explosions.
- Do not place the monitor inside a microwave oven or other heating or cooking appliance or pressure vessel. Doing so may cause heat or smoke to be generated in the monitor, combustion and/or damage to the circuit components.
- Inside the monitor are some high-voltage parts: since exposure to these parts may result in electric shocks or burns, refrain from disassembling, repairing or remodeling the monitor.
- If there is a thunderstorm while the monitor is being used outdoors, immediately turn off its power, and move the monitor to a safe place.

CONCERNING THE POWER CORD

- Always take hold of the molded part of the plug when disconnecting the power cord.
- Do not use force to bend the power cord or bunch it up for use. This may cause a fire.
- Do not place heavy objects on top of the power cord. This may damage the cord, causing a fire or electrical shock.

CONCERNING FOREIGN MATTER

- Do not spill liquids inside the monitor or drop inflammable objects or metal parts into it. Operating the monitor under these conditions may cause a fire, electric shocks or malfunctioning.

⚠ CAUTION

CONCERNING THE POWER SUPPLY

- Use a supply voltage within the range of 10V to 18V DC for the monitor.
- Do not turn the power back on immediately after having turned it off. Doing so can cause malfunctioning.

CONCERNING THE LIQUID CRYSTAL PANEL

- Due to the nature of liquid crystal, some picture elements may be missing (bright spots or dark spots).
- Do not touch any liquid crystal which has leaked from the liquid crystal panel.

  If the liquid crystal panel has been damaged by mistake and the liquid (liquid crystal) inside has leaked out, keep the liquid away from your mouth and skin and do not inhale its odors.

  In the unlikely event that liquid crystal has made contact with your eyes or mouth, use water to rinse it off immediately. If it has come into contact with your skin or clothing, wipe it off immediately with alcohol, and then rinse it off with soap. Leaving it may damage your skin or clothing.
- Exercise care with the glass of a broken liquid crystal panel. If the panel has broken, take care not to cut your hands on the glass shards. If you should touch an area where the glass has broken off, you may injure yourself.
- The LCD panel is a high-precision component and, as such, the following care must be taken in its handling.
  1) Wiping the panel's surface with benzine, paint thinners, etc. will cause a deterioration in its quality.
  2) If water (salty water) is left on the display surface, discoloration and staining will result.
  3) Exposing the panel directly to ultraviolet rays for an extended period invites the deflection panel to turn brown, causing the contrast to drop and other forms of deterioration to develop in the display quality.
  4) Moisture inside the monitor due to condensation, etc. may cause unevenness in the colors.
  5) Directly tapping the surface or bumping it into objects may crack the panel, etc.
  6) Do not attempt to disassemble the panel since leaking liquid crystal may make contact with your skin, which is hazardous.
- Handle the liquid crystal protective panel carefully.
  Gently wipe off any fingerprints or dirt on the liquid crystal protective panel with a cleaning agent used to clean office automation equipment. Rubbing the panel with too much force may mark or damage the panel.

CONCERNING IMPACT

- This is a precision instrument and, as such, subjecting it to impact may cause malfunctioning. Take special care when moving the monitor.
- Do not drop the monitor.

CONCERNING THE OPERATION LOCATION

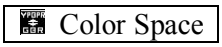
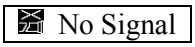
- Installation in the following locations can cause malfunctioning.
  1) Locations with an ambient temperature outside the range of 0 to 40 degrees Celsius (see Note 1)
  2) Locations with an ambient humidity outside the range of 30 to 80% RH
  3) Locations in the vicinity of an air conditioner or subject to rapid temperature changes or the formation of condensation
  4) Locations exposed to direct sunlight (see Note 2)
  5) Locations exposed to corrosive gases or high concentrations of dust
  6) Locations where strong magnetic fields are generated
  7) Locations which may be splashed with water, oil, chemicals, etc.
  8) Locations to which vibrations are transmitted from the floor
  9) Unstable locations

- Take care to meet the following conditions in order to ensure that the monitor will be used properly.Concerning the operation location
  1) Do not place heavy objects such as a monitor directly on top of this unit.
  2) Avoid placing any objects around the monitor.

  Note 1: When the surface temperature of the LCD panel exceeds 60 degrees Celsius, the panel's backlight and other parts may be damaged.

  Note 2: Exposing the panel directly to ultraviolet light for an extended period causes the deflection panel to turn brown, in turn causing the contrast to drop and other forms of deterioration to develop in the display quality.

WHEN THE MONITOR FAILS TO OPERATE PROPERLY

- When the image is not displayed properly, check the  (YPbPr/GBR) and format settings.
- If  appears on the screen even though input signals have been supplied, check the input and format settings.
- If the front panel switches should fail to operate, check whether the LOCK switch is at the ON position.

WHEN TROUBLE OR MALFUNCTIONING OCCURS

- In the unlikely event that trouble or malfunctioning should occur, contact your dealer or an Astrodesign sales representative.
- If trouble should develop in the LCD panel, the user will be charged for repairs or replacement regardless of whether this happens during the warranty period or not.

CONCERNING THIS MANUAL

- It is strictly forbidden to copy this manual either in part or in its entirety without permission from Astrodesign.

  1) The contents and specifications of this manual are subject to change without notice for the purposes of improving quality.

  2) Although this manual has been prepared with painstaking care, the user is asked to contact Astrodesign if any ambiguities, mistakes, omissions or other shortcomings are noticed.

CHAPTER 1 CONCERNING THE DM-3005A

The DM-3005A is a compact, lightweight and portable LCD picture monitor which comes in handy for monitoring the pictures being shot during live broadcasts, on location or in studios, etc.

The camera battery is supported as the power supply so that pictures can be checked even in locations where difficulties have been encountered in the past in carrying in equipment.

A full range of functions is provided including functions for adjusting the brightness, contrast and chroma level as well as functions for displaying markers.

A total of 23 HDTV video formats and two SDTV video formats are supported as the input signals.

1.1 OUTLINE OF DM-3005A

- 6.3-inch a-Si TFT LCD panel featured
- Input of HD-SDI, SD-SDI, YPbPr HD analog signals and GBR HD analog signals supported (*)(HD analog signals: Y or G On-Sync)
- 25 different video formats supported

  Standards supporting HD-SDI: SMPTE 292M, BTA-S004B standards complied with (1.485 Gbps SDI input)

  Standards supporting SD-SDI: SMPTE 259M standard complied with (270 Mbps SDI input)

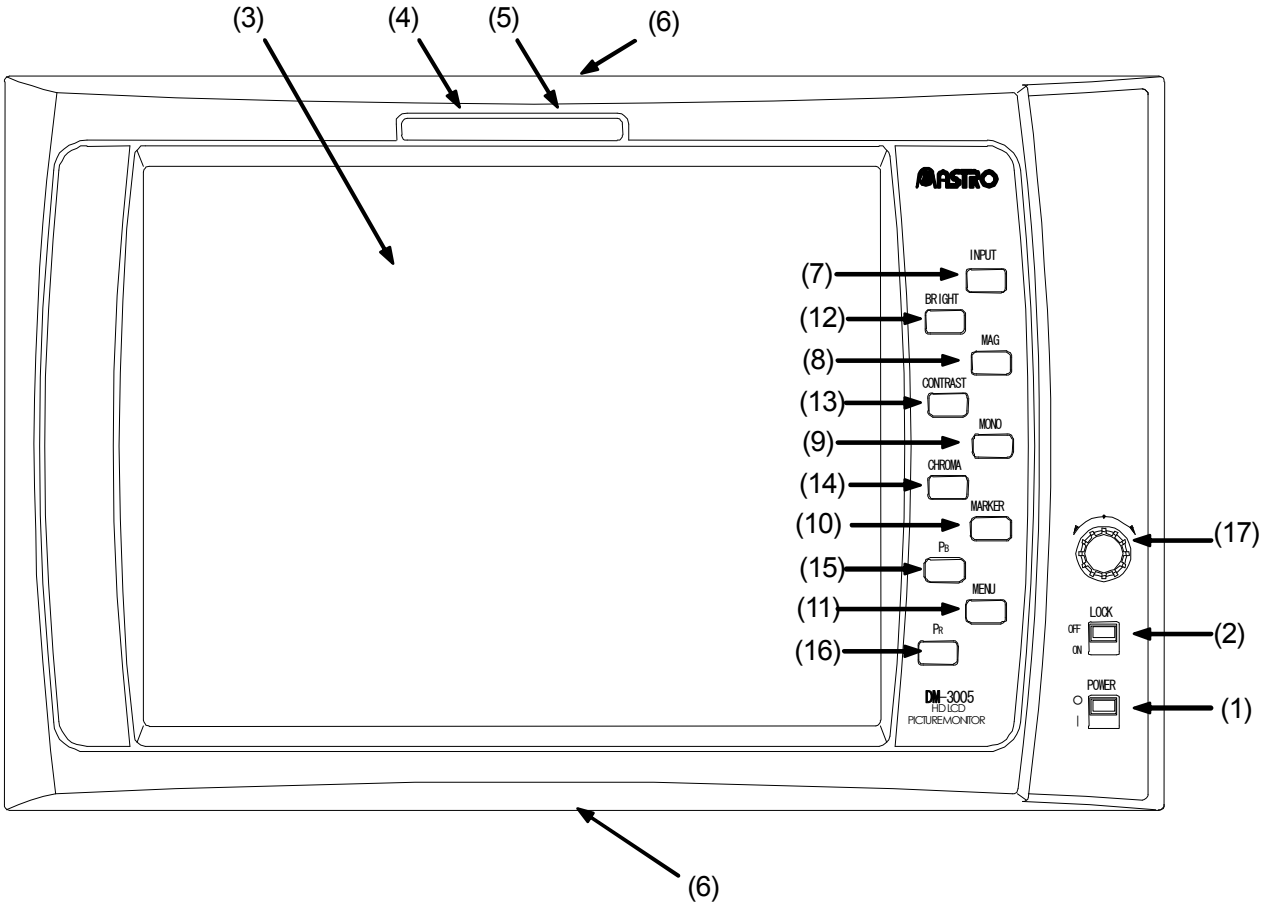
  Standards for analog input and supported formats: SMPTE 274M, SMPTE 296M, BTA-S001B standards complied with
- SDI IN and SDI MONITOR OUT, HDTV analog input (ANALOG Y/G, ANALOG Pb/B, ANALOG Pr/R) connectors provided
- Brightness, contrast, chroma, filter, monochrome, Y gamma and display magnification functions
- Marker display functions (frame, center, 4: 3, 13: 9, 14: 9, 2.35: 1, 1.85: 1, 1.66: 1)
- Single-action operation of input channels, display magnification, monochrome function, marker display/non-display using the switches on the front panel
- Lighting of red, green LEDs at top of screen by external contact-type tally inputs
- Automatic scanning of input signals possible
- Automatic 1/1.000 and 1/1.001 frame rate scanning, input signal detection functions
- CRC error detection function (during HD-SDI input) for input channels
- Time code (VITC) displayed (with HD-SDI input)
- Functions for locking the panel switches and storing the setting values
- Light weight and compact size
- DC supply power input (10-18V)
- Camera battery supported

(*) Simplified display for the GBR HD analog signals

CHAPTER 2 PARTS AND THEIR FUNCTIONS

2.1 DM-3005A FRONT PANEL VIEW AND PARTS

DM-3005 front panel view



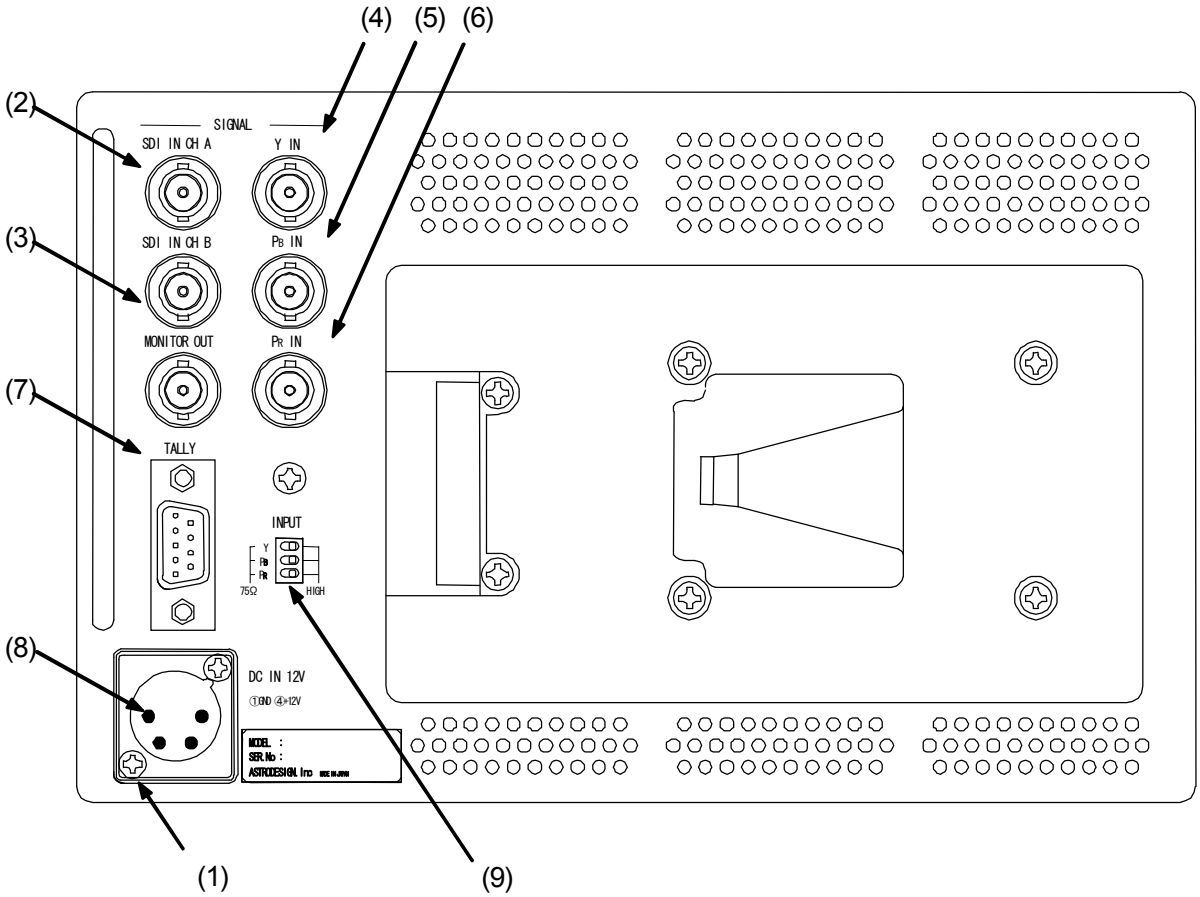
Front panel parts and their functions

Number	Part	Description of function	
(1)	Power switch/LED	This switch is used to turn the power ON and OFF. (Its LED lights up green while the power is being supplied.)	
(2)	LOCK switch/LED	This switch is used to lock the panel switches and save the setting values simultaneously. Description of function [Wait] appears at the bottom right of the screen while the settings are being saved, and upon completion of the saving process, [PANEL LOCK] appears. The saved settings are loaded when the power is turned on. Do not turn off the power while the setting saving process is in progress. If the LOCK switch is released or the power is turned off during this process, the initial settings may be established instead of the saved settings when the power is next turned on. (Its LED lights up yellow while the panel switches are locked.)	
(3)	Liquid crystal display	The images appear on this display.	
(4)	TALLY 1	Tally lamp (red): this is controlled by the rear panel tally connector (tally: contact type).	
(5)	TALLY 2	Tally lamp (green): this is controlled by the rear panel tally connector (tally: contact type).	
(6)	1/4-20UNC threaded hole	Threaded hole for a screw to anchor the monitor (used to anchor the monitor to a tripod, arm, etc.).	
(7)	INPUT switch	This is used to select the SDI A or SDI B. Pressing the switch for 1 second will change the input signals to analog.	
(8)	MAG switch	This is used to set the display magnification to ON or OFF.	
(9)	MONO switch	This is used to set the monochrome display to ON or OFF. When it is held down (for more than 1 second), the color setting screen appears. Selecting monochrome ON or OFF is valid only when YPbPr is selected by [Color Space]. (See Section 3.4.)	
(10)	MARKER switch	This is used to select whether to display the markers or not.	
(11)	MENU switch	This is used to set the menu screen to ON or OFF.	
(12)	BRIGHT switch	When YPbPr (ColorSpace) is selected	This enables the brightness to be adjusted. When it is held down (for more than 1 second), the Y gamma can be adjusted.
		When GBR (ColorSpace) is selected	The GBR adjustments can be performed at the same time.
(13)	CONTRAST switch	When YPbPr (ColorSpace) is selected	This enables the contrast to be adjusted.
		When GBR (ColorSpace) is selected	Not to be used.

Number	Part	Description of function	
(14)	CHROMA switch	When YPbPr (ColorSpace) is selected	This enables the chroma to be adjusted.
		When GBR (ColorSpace) is selected	Green can be adjusted.
(15)	Pb switch	When YPbPr (ColorSpace) is selected	This enables the Pb (Cb) to be adjusted.
		When GBR (ColorSpace) is selected	Blue can be adjusted.
(16)	Pr switch	When YPbPr (ColorSpace) is selected	This enables the Pr (Cr) to be adjusted.
		When GBR (ColorSpace) is selected	Red can be adjusted.
(17)	Adjustment dial	This is used to adjust and select the setting values.	

2.2 DM-3005 REAR PANEL VIEW AND PARTS

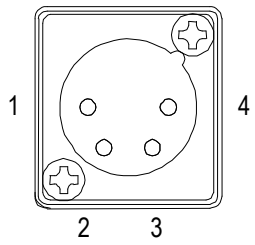
DM-3005 rear panel view



Names of rear panel parts

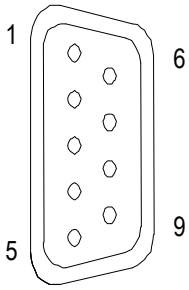
Number	Part	Description of function
(1)	Power socket (*1)	Cannon connector, DC power input socket (GND: pin 1; DC IN: pin 4).
(2)	SDI IN CH A	HD-SDI, SD-SDI signal input connector.
(3)	SDI IN CH B	HD-SDI, SD-SDI signal input connector.
(4)	Y IN	HD-analog Y/G signal input connector; synchronization is provided by the Y/G signal in the case of analog inputs.
(5)	Pb IN	HD-analog Pb/B signal input connector.
(6)	Pr IN	HD-analog Pr/R signal input connector.
(7)	MONITOR OUT	Output connector for SDI input signals loop-through out. It outputs SDI A signals when SDI A input is selected. It outputs SDI B signals when SDI B input is selected. It outputs SDI A signals when analog input is selected.
(8)	TALLY connector (*2)	D-sub 9-pin (female)
(9)	Termination selector switch (*3)	This is used to enable or disable the 75-ohm termination for the analog signals.

***1: Power socket (no.1)**



Pin No.	Function
1	GND
2	NC
3	NC
4	DC IN (10 to 18V)

***2: TALLY connector (no. 8)**



Pin No.	Function
1	GND
2	TALLY2 (green)
3	NC (reserved) (Note)
4	NC (reserved) (Note)
5	NC (reserved) (Note)
6	GND
7	TALLY1 (red)
8	NC (reserved) (Note)
9	GND

When GND and pin 2 are shorted, the tally green lamp lights; when GND and pin 7 are shorted, the tally red lamp lights.

Note:
Do not connect anything to the pins marked NC (reserved). Doing so may cause malfunctioning.

***3: Termination selector switch (no. 9)**

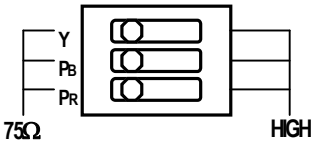


Figure showing initial setting

Switch	Setting	
	Left	Right
Y	Y/G 75-ohm termination	No Y/G termination
PB	PB/B 75-ohm termination	No PB/B termination
PR	PR/R 75-ohm termination	No PR/R termination

As shown in the initial setting figure, the initial setting positions starting with the top one first are left (Y/G 75-ohm termination), left (Pb/B 75-ohm termination) and left (Pr/R 75-ohm termination).

CHAPTER 3 OPERATION

3.1 CONNECTIONS

This section describes how to connect the DM-3005A.

(1) Connecting the power supply

Check that the POWER switch on the main unit is at the OFF position, and connect the Cannon connector of the AC/DC adapter to the DM-3005A's power socket (<1> on the rear panel view).Check the shape of the connector and socket before use.

(2) Connecting the input signals

- When SDI signals are to be input
  When SDI signals are to be input, use a BNC coaxial cable to make the connection to the SDI IN connector.
  The SDI IN connector is where the SDI signals are input; MONITOR OUT is an output connector which is used for the simplified monitoring of the SDI input signals.
  Supply serial input signals complying with the BTA S-004B standard as the HD-SDI input signals. Use a coaxial cable (5C-FB or its equivalent) which can handle the 1.5 GHz band.
  Supply serial input signals complying with the SMPTE 259M standard (270 Mbps) as the SD-SDI input signals.

- When analog signals are to be input
  When HD-analog signals are to be input, input the YPbPr (or GBR) signals to the respective analog connectors.
  Input YPbPr (or GBR) signals complying with the BTA S-001B standard as the HD-analog input signals.
  Synchronization is obtained from the Y (or G) signal.
  Only analog signals which meet the HDTV standard may be input.

  Note:
  A simplified display is featured for the GBR signals. Contrast, brightness, chroma, monochrome and Y gamma adjustments cannot be performed for these signals.

3.2 USAGE

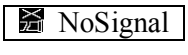
A protective film is attached to the surface of the LCD panel. Peel it off before using the DM-3005.

After checking the connections, turn on the power of the DM-3005A using the POWER switch on the front panel. The POWER LED lights, and images are displayed.

If the POWER LED fails to light, check the connections again.

Conduct the simplified monitoring of the SDI input signals at the MONITOR OUT connector.

The analog input signals will not appear on the monitor if no sync signals are contained in the Y (or G) signal. Check the ARIB BTA S-001 and other standards for the levels, etc.

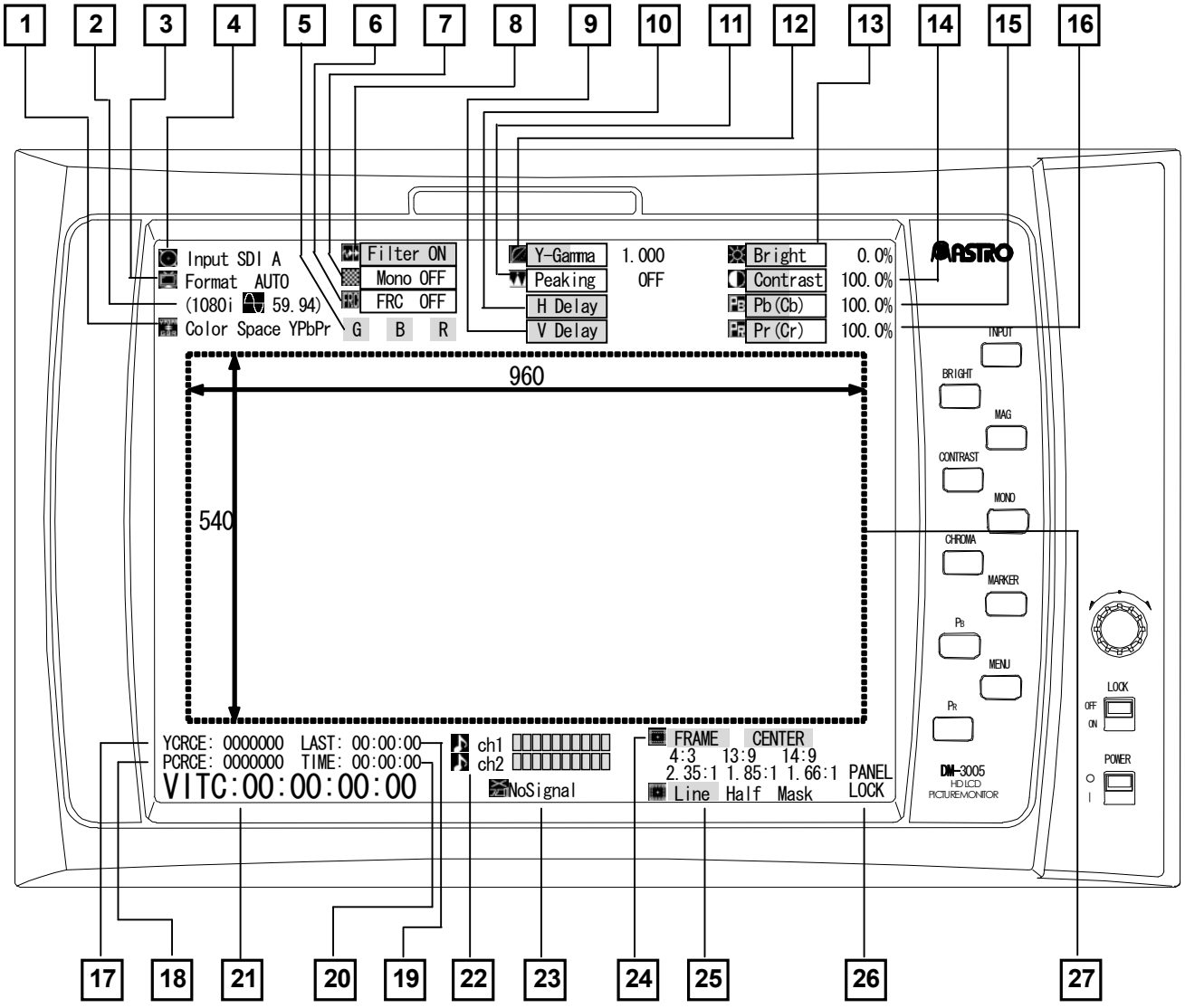
If no input signals are supplied, the image area appears all black, and  is displayed in red on the screen.

3.3 CONCERNING THE SCREEN DISPLAYS

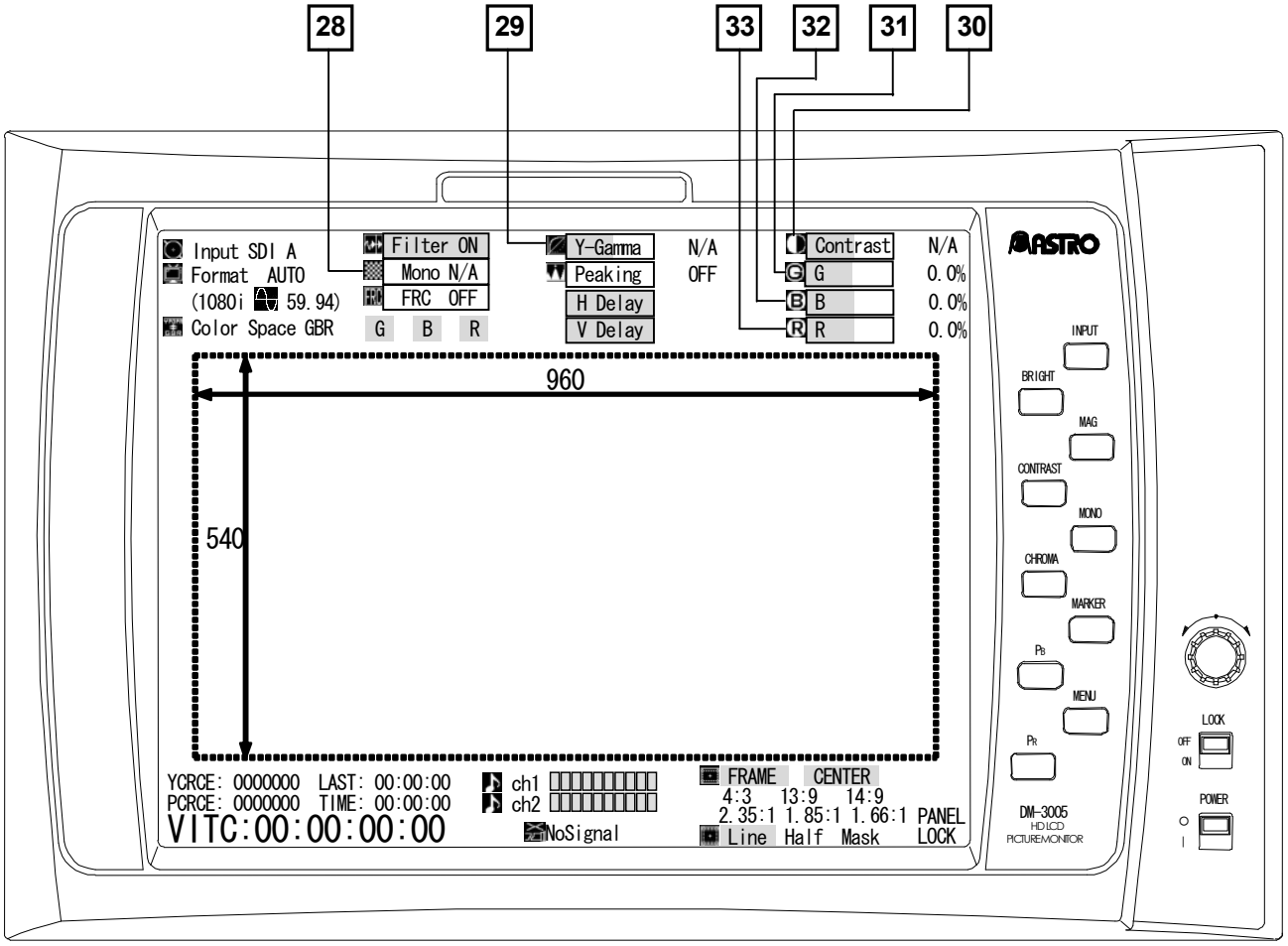
This section describes the displays appearing on the DM-3005A screen and how to perform the screen settings.

3.3.1 Normal screen

(When Color Space YPbPr is selected)

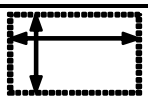


(When Color Space GBR is selected)



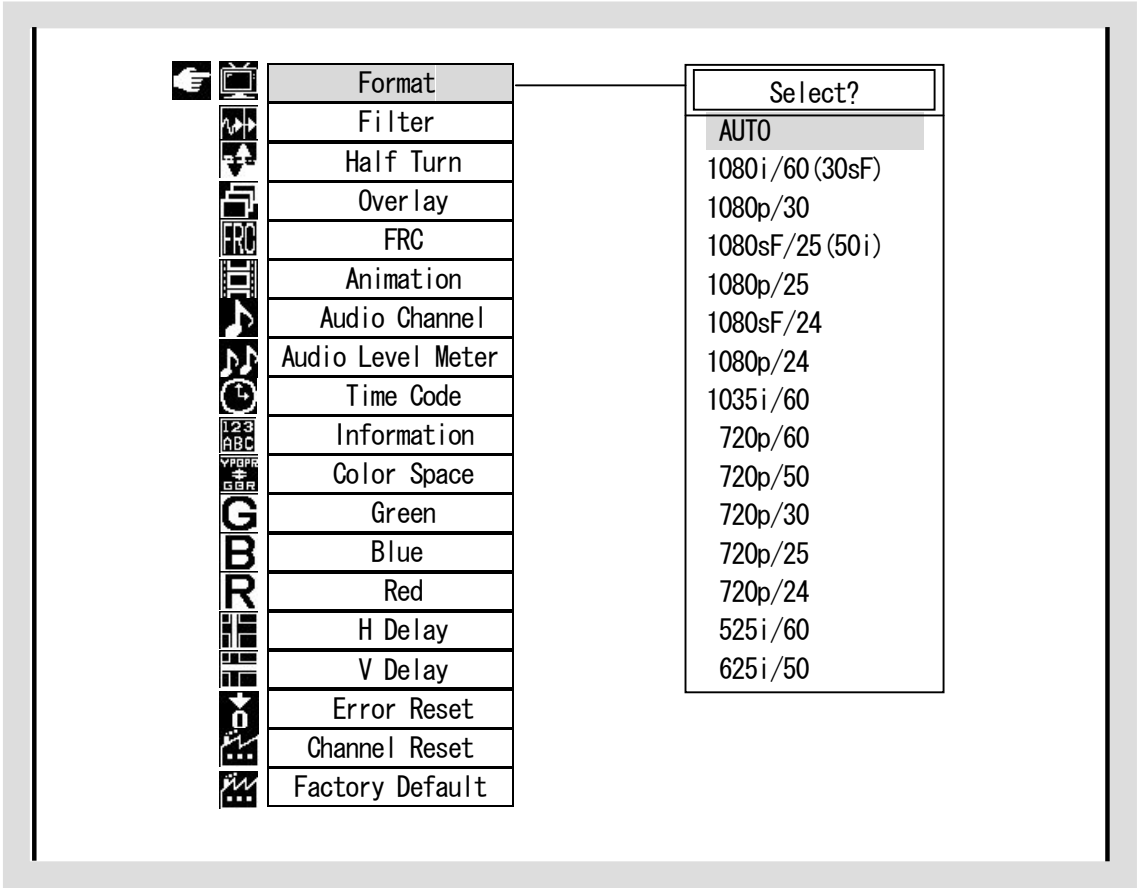
No.	Item	Description
1	Color Space	The color space of the input signals is displayed here.
2	(frequency)	The frequency of the input signals is displayed here. If no signals are input (when NoSignal appears on the screen), "*" appears. (For details on the formats, refer to Chapter 4.)
3	Format	The selected format is displayed here. Indicated within the parentheses on the line below are the input signal format and field (or frame) frequency. When analog input has been selected even if 1035i input signals are supplied, these signals will be identified as 1080i signals. If no signals are input (when NoSignal appears on the screen), "*" appears. (For details on the formats, refer to Chapter 4.) If there are no input signals or if the format which has been set and the format of the actual input signals differ, Format appears in red.
4	Input	Displayed here is the input channel (SDI A, SDI B or Analog) which has been selected by the INPUT switch.

No.	Item	Description
5	G B R	A highlighted G, B or R indicates that the corresponding signal is ON.
6	FRC	Either ON or OFF for 8-bit processing by frame rate control is displayed here.
7	Mono (*1)	Either monochrome ON or OFF is displayed here.
8	Filter	Either filter ON or OFF is displayed here.
9	V Delay	This indicates that V Delay is ON.
10	H Delay	This indicates that H Delay is ON.
11	Peaking	The peaking setting is displayed here.
12	Y-Gamma	The Y gamma setting is displayed here. (Refer to Section 4.4.) This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
13	Bright	The brightness setting is displayed here. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
14	Contrast	The contrast setting is displayed here. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
15	Pb(Cb)	The Pb (Cb) setting is displayed here. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
16	Pr(Cr)	The Pr (Cr) setting is displayed here. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
17	YCRCE	This is where the Y signal is checked for CRC errors and the number of errors is displayed. When an error is found, YCRCE appears in red for one second. Note: The CRC errors are not counted when SD-SDI signals or analog signals are input. Neither are they counted for one second after the input signals have been changed by the INPUT switch.
18	PCRCE	This is where the Pb and Pr signals are checked for CRC errors and the number of errors is displayed. When an error is found, PCRCE appears in red for one second. Note: The CRC errors are not counted when SD-SDI signals or analog signals are input. Neither are they counted for one second after the input signals have been changed by the INPUT switch.
19	LAST	The time elapsed since the last error was found is displayed here.
20	TIME	The time elapsing since the DM-3005A was started up or the error count was reset is displayed here.
21	VITC	The time code (VITC) is displayed here. It appears only when SDI signals have been selected. Note: Although the time code is displayed accurately for HD-SDI signals, it may not be displayed accurately for SD-SDI signals.
22	ch *	The selected audio channel is displayed here. (Refer to Section 4.6.) It appears only when SDI signals have been selected.
23	NoSignal	If the signal which has been set and the actual input signals differ, NoSignal appears in red.

No.	Item	Description
24	(Marker)	Displayed here is a list of the usable markers. The currently selected marker is highlighted. <Types of marker > FRAME, CENTER, 4: 3, 13: 9, 14: 9, 2.35: 1, 1.85: 1, 1.66: 1 Note: With the 525i/60 and 625i/50 formats, the 4: 3, 13: 9 and 14: 9 markers will not be displayed even their names are highlighted. The 1080 marker is displayed if there are no input signals, and Auto has been selected as the format.
25	(Mask)	Displayed here is a list of the masks displayed by the markers. <Types of masks> Line (lines only), Half (lines and half mask), Mask (lines and mask) Note: The narrowest marker is masked by the selected marker.
26	PANEL LOCK	This indicates that the panel lock is in effect.
27		The area enclosed by the dotted lines in the figure is the image area. The screen size is normally 960 × 540 pixels. It is reduced to 720 × 487 pixels with the 525i/60 format and 720 × 574 pixels with the 625i/50 format.
28	Mono N/A	This indicates that the monochrome setting cannot be established. Instead, the initial value is set temporarily. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
29	Y-Gamma N/A	This indicates that the Y gamma cannot be set. Instead, the initial value is set temporarily. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
30	Contrast N/A	This indicates that the contrast cannot be set. Instead, the initial value is set temporarily. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
31	G G	This indicates the Green setting. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
32	B B	This indicates the Blue setting. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)
33	R R	This indicates the Red setting. This appears only when YPbPr has been selected by Color Space. (Refer to Section 3.4.)

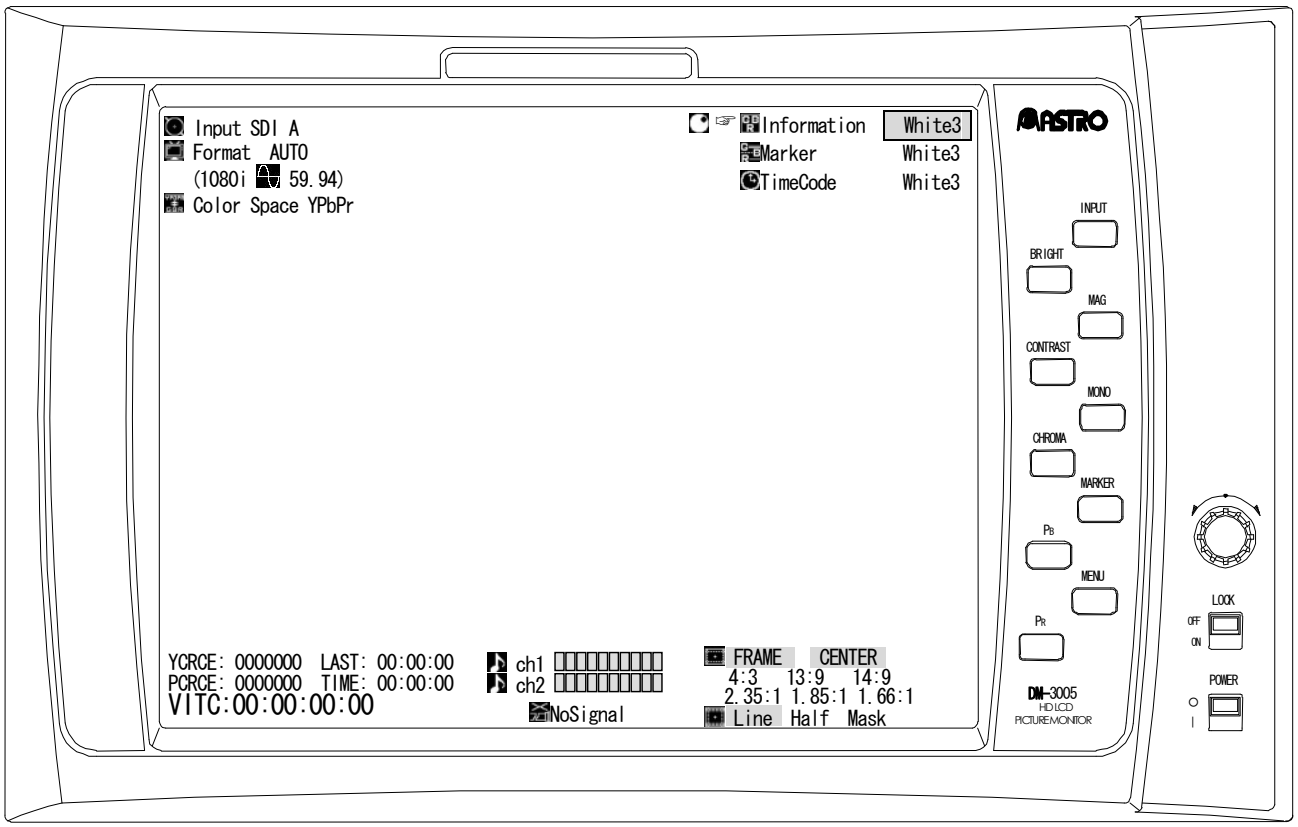
3.3.2 Menu screens

The current settings can be viewed by turning the adjustment dial.



Item	Description
Format	This indicates the currently selected format. (Refer to Section 4.1.)
Filter	This indicates ON or OFF as the filter setting.
HalfTurn	This indicates ON or OFF as the top/bottom screen inversion setting.
Overlay	This indicates ON or OFF as the image setting when the menu screen is displayed.
FRC	This indicates ON or OFF for the 8-bit processing using frame rate control.
Animation	This indicates ON or OFF as the icon animation setting.
Audio Channel	This indicates the currently set audio channel.
Audio Level Meter	This indicates ON or OFF as the audio level meter setting.
Time Code	This indicates ON or OFF as the time code setting.
Information	This indicates ON or OFF as the information setting.
Color Space	This indicates YPbPr or GBR as the color space setting.
Green	This indicates ON or OFF as the Green signal setting.
Blue	This indicates ON or OFF as the Blue signal setting.
Red	This indicates ON or OFF as the Red signal setting.
H Delay	This indicates ON or OFF as the H Delay setting.
V Delay	This indicates ON or OFF as the V Delay setting.
Error Count	CRC error count reset
Channel Reset	Initialization of settings for currently selected channel
Factory Default	This initializes all the channel settings.

3.3.3 Color setting screen



Item	Description
Information	The color used for the characters is displayed here.
Marker	The color used for the markers is displayed here.
TimeCode	The color used for the time code is displayed here.

3.4 OPERATION PROCEDURE

Selecting the input signal

1. To switch from analog input to SDI A (or B) or between SDI A and SDI B, press the INPUT switch. To switch to analog input, hold down the INPUT switch (for at least 1 second).

Selecting the format

1. Press the MENU switch.
2. Turn the adjustment dial to select [Format], and press the adjustment dial at [Select?] to switch to format selection.
3. Turn the adjustment dial to select the format, and press the adjustment dial to enter the selection.
4. To exit from the format selection, select [Exit?], and press the adjustment dial.

Additional note

<Types of formats>

AUTO, 1080i/60(30sF), 1080p/30, 1080sF/25(50i), 1080p/25, 1080sF/24, 1080p/24, 1035i/60, 720p/60, 720p/50, 720p/30, 720p/25, 720p/24, 525i/60(*), 625i/50(*)

When AUTO is selected, the format is automatically searched from among the ones listed above.

(*) None of these formats are available when analog signals are input.

Selecting the same size display

1. Press the MAG switch Additional note

Additional note

The INPUT switch and MONO switch also work in the same size display status. If the MAG switch is pressed again or any switch other than the INPUT switch or MONO switch is pressed, the standard image display is restored. (Refer to Section 4.5.)

Caution

No special image processing is undertaken in the same size display status.

Switching the display to monochrome or color

1. Press the MONO switch.

Caution

The switching has no effect when GBR has been selected by [Color Space]. The display is switched temporarily to color.

Displaying and selecting the markers

1. Press the MARKER switch.
2. Turn the adjustment dial to select the marker, and press the adjustment dial to set the marker ON or OFF.

Additional note

More than one marker can be selected at the same time. No markers can be selected unless [Information] is ON.

Only ON or OFF can be set.

<Types of markers>
FRAME, CENTER, 4: 3, 13: 9, 14: 9, 2.35: 1, 1.85: 1, 1.66: 1

Caution

With the 525i/60 and 625i/50 formats, the 4: 3, 13: 9 and 14: 9 markers are not displayed. Further, the 1080 marker is displayed if there are no input signals, and [AUTO] has been selected as the format.

Setting the marker masks

1. Press the MARKER switch.
2. Turn the adjustment dial to select the type of mask, and press the adjustment dial to switch the mask.

Additional note

The marker with the narrowest display area is subject to Half Mask or Mask. The mask can be set even when the marker is OFF, but it is displayed only when the marker is ON.

<Types of masks>
Line (lines only), Half (lines and half mask), Mask (lines and mask)

Caution

With the 525i/60 and 625i/50 formats, the 4: 3, 13: 9 and 14: 9 masks are not displayed. Further, the 1080 marker is used to display the mask if there are no input signals, and [AUTO] has been selected as the format.

Adjusting the offset level of the brightness signal

1. Press the BRIGHT switch, and turn the adjustment dial to adjust the brightness level (offset level of the brightness signal). To return the brightness level to its initial value, press the adjustment dial.

Additional note

The offset level can be set to any value from -50.00 to +50.00%. (Refer to Section 4.4.)

To exit from the brightness adjustment, press the BRIGHT switch again. If the marker is ON at this time, the marker setting status will be established.

Caution

This adjustment takes effect only when YPbPr has been selected by Color Space.

If GBR is selected, the functions used to adjust the other settings take effect.

Adjusting the brightness signal level

1. Press the CONTRAST switch, and turn the adjustment dial to adjust the contrast (brightness signal level).
   To return the contrast to its initial value, press the adjustment dial.

Additional note

The brightness signal level can be set to any value from 0.0 to 200.0%. (Refer to Section 4.4.) To exit from the contrast adjustment, press the CONTRAST switch again. If the marker is ON at this time, the marker setting status will be established.

Caution

This adjustment takes effect only when YPbPr has been selected by Color Space.

Adjusting the Pb (Cb) value

1. Press the PB switch, and turn the adjustment dial to adjust the Pb (Cb) value (color difference signal level). To return the Pb (Cb) level to its initial value, press the adjustment dial.

Additional note

The Pb (Cb) level can be set to any value from 0.0 to 200.0%. (Refer to Section 4.4.) To exit from the Pb (Cb) level adjustment, press the PB switch again. If the marker is ON at this time, the marker setting status will be established.

Caution

This adjustment takes effect only when YPbPr has been selected by Color Space. If GBR is selected, the functions used to adjust the other settings take effect.

Adjusting the Pr (Cr) value

1. Press the PR switch, and turn the adjustment dial to adjust the Pr (Cr) value (color difference signal level). To return the Pr (Cr) level to its initial value, press the adjustment dial.

Additional note

The Pr (Cr) level can be set to any value from 0.0 to 200.0%. (Refer to Section 4.4.)

To exit from the Pr (Cr) level adjustment, press the PR switch again. If the marker is ON at this time, the marker setting status will be established.

Caution

This adjustment takes effect only when YPbPr has been selected by Color Space.

If GBR is selected, the functions used to adjust the other settings take effect.

Adjusting the Pr (Cr) and Pr (Cr) values simultaneously

1. Press the CHROMA switch, and turn the adjustment dial to adjust the chroma value (color difference signal level). To return the chroma level to its initial value, press the adjustment dial.

Additional note

When the Pb (Cb) or Pr (Cr) reaches the maximum or minimum level, no further adjustment is possible.

The chroma level can be set to any value from 0.0 to 200.0%. (Refer to Section 4.4.)

To exit from the chroma level adjustment, press the CHROMA switch again. If the marker is ON at this time, the marker setting status will be established.

Caution

This adjustment takes effect only when YPbPr has been selected by Color Space.

If GBR is selected, the functions used to adjust the other settings take effect.

Adjusting the Y gamma value

1. Hold down the BRIGHT switch, and turn the adjustment dial to adjust the Y gamma value. To return the Y gamma level to its initial value, press the adjustment dial.

Additional note

The Y gamma level can be set to any value from 0.500 to 2.000.

To exit from the Y gamma level adjustment, hold down the BRIGHT switch again. If the marker is ON at this time, the marker setting status will be established.

Caution

This adjustment takes effect only when YPbPr has been selected by Color Space.

Adjusting the peaking value

1. Hold down the CONTRAST switch, and turn the adjustment dial to adjust the peaking value. To return the peaking level to its initial value, press the adjustment dial.

Additional note

The peaking level can be set to OFF or ON (1 to 100). When peaking is ON, the filter is OFF.

To exit from the peaking level adjustment, hold down the CONTRAST switch again. If the marker is ON at this time, the marker setting status will be established.

Once peaking has been set to ON and the filter to OFF, the filter will remain at OFF even when peaking is returned to OFF or the peaking adjustment is exited.

Caution

When GBR has been selected by Color Space, the peaking level of the G signal is adjusted.

Selecting ON or OFF for the filter

1. Press the MENU switch.
2. Turn the adjustment dial to select Filter, and press the adjustment dial to select ON or OFF.

Additional note

Once the filter is set to ON, peaking is set to OFF.

Caution

With the 525i/60 and 625i/50 formats, the selection has no effect even when ON is selected. If OFF is selected when HD standard signals are input, the processing will use simple pixel skipping, and the resulting images will be output.

Selecting top/bottom screen inversion

1. Press the MENU switch.
2. Turn the adjustment dial to select [HalfTurn], and press the adjustment dial to select ON or OFF.

Displaying or non-displaying images when menu screens appear

1. Press the MENU switch.
2. Turn the adjustment dial to select [Overlay], and press the adjustment dial to select ON or OFF.

Selecting frame rate control

1. Press the MENU switch.
2. Turn the adjustment dial to select [FRC], and press the adjustment dial to select ON or OFF for the 8-bit processing using frame rate control.

Caution

Flickering may occur on the screen at the ON setting.

Selecting ON or OFF for the icon animation

1. Press the MENU switch.
2. Turn the adjustment dial to select [Animation], and press the adjustment dial to select ON or OFF.

Additional note

"Icon animation" refers to the movement of the hand icons for indicating the values which are being adjusted or set.

Selecting the audio channel

1. Press the MENU switch.
2. Turn the adjustment dial to select [Audio Channel], press the adjustment dial at [Select?] to switch to audio channel selection.
3. Turn the adjustment dial to select the audio channel, and press the adjustment dial to enter the selection.
4. To exit from the audio channel selection, select [Exit?], and press the adjustment dial.

Caution

No audio channels are available when analog signals are input.

Selecting ON or OFF for the audio level meter display

1. Press the MENU switch.
2. Turn the adjustment dial to select Audio Level Meter, and press the adjustment dial to select ON or OFF.

Additional note

The displays on the audio level meter accord with the BTA S-006B and SMPTE 272M-A standards for audio data.

For details on the audio levels of the audio level mete, refer to Section 4.6.

Caution

The audio level meter is not available when analog signals are input.

Selecting ON or OFF for the time code display

1. Press the MENU switch.
2. Turn the adjustment dial to select Time Code, and press the adjustment dial to select ON or OFF.

Additional note

The VITC complying with the ARIB STD-B4 is displayed as the time code.

Caution

The time code is not available when analog signals are input.

Selecting ON or OFF for information

1. Press the MENU switch.
2. Turn the adjustment dial to select Information, and press the adjustment dial to select ON or OFF.

Additional note

"Information" refers to the text display. It does not refer to the time code or audio markers since these can be displayed or non-displayed independently. NoSignal is also displayed regardless of whether information is ON or OFF. Some items cannot be adjusted if information is set to OFF.

Selecting the color space

1. Press the MENU switch.
2. Turn the adjustment dial to select Color Space, and press the adjustment dial to select YPbPr or GBR.

When GBR has been selected by Color Space, some items cannot be adjusted.

Selecting ON or OFF for Green

1. Press the MENU switch.
2. Turn the adjustment dial to select G Green, and press the adjustment dial to select ON or OFF.

The green, blue and red colors cannot all be set to OFF at the same time.

Selecting ON or OFF for Blue

1. Press the MENU switch.
2. Turn the adjustment dial to select B Blue, and press the adjustment dial to select ON or OFF.

The green, blue and red colors cannot all be set to OFF at the same time.

Selecting ON or OFF for Red

1. Press the MENU switch.
2. Turn the adjustment dial to select R Red, and press the adjustment dial to select ON or OFF.

The green, blue and red colors cannot all be set to OFF at the same time.

Selecting ON or OFF for H Delay

1. Press the MENU switch.
2. Turn the adjustment dial to select H Delay, and press the adjustment dial to select ON or OFF.

Selecting ON or OFF for V Delay

1. Press the MENU switch.
2. Turn the adjustment dial to select V Delay, and press the adjustment dial to select ON or OFF.

Resetting the error count

1. Press the MENU switch.
2. Turn the adjustment dial to select Error Reset, and press the adjustment dial.

Additional note

Both the CRC errors and elapsed time are reset.

Returning the settings to the initial values

- **Initializing the settings of the currently selected channel (refer to Section 4.7)**

1. Press the MENU switch.
2. Turn the adjustment dial to select Channel Reset, and press the adjustment dial.

- **Initializing the settings of all the channels (refer to Section 4.7)**

1. Press the MENU switch.
2. Turn the adjustment dial to select Factory Default, and press the adjustment dial.

Additional note

Both the CRC errors and elapsed time are reset.

Changing the text color

1. Press the MONO switch.
2. Turn the adjustment dial to select Information, and press the adjustment dial.
3. Turn the adjustment dial to set the text color (63 colors).

Changing the marker color

1. Press the MONO switch.
2. Turn the adjustment dial to select Marker, and press the adjustment dial.
3. Turn the adjustment dial to set the marker color (64 colors).

Changing the time code color

1. Press the MONO switch.
2. Turn the adjustment dial to select TimeCode, and press the adjustment dial.
3. Turn the adjustment dial to set the time code color (63 colors).

Saving the settings

1. Set the LOCK switch to ON.

Additional note

All the key operations are canceled, and the values of the setting items set forth in Section 4.6 are saved. The settings saved at this time are loaded and established when the power is next turned on.

Do not turn off the power or release the LOCK switch while Wait is displayed. If the LOCK switch is released or the power is turned off while the settings are being saved, the initial settings may be established instead of the saved settings when the power is next turned on.

3.6 INSTALLING AND SECURING THE MONITOR

Provided at the top and bottom of the monitor are 1/4-20UNC threaded holes. Fit screws into these holes to anchor the monitor to a tripod, arm, etc.

Do not mount any items other than the options (see Note), battery and cables on the DM-3005A main unit. Doing so may damage the threaded hole.

Use the fixtures available as optional accessories to mount the monitor in a rack.

Note: See Chapter 5.

CHAPTER 4 MAIN SPECIFICATIONS

4.1 INPUT FORMATS

Format		Frame Rate (Hz)	Active Line per Frame	Total Line Per Frame	Line Frequency (kHz)	Samples per Active Line	Samples per Total Line	Scanning *1	*2
1035i/60	1035i/59.94	30/1.001	1035	1125	33.72	1920	2200	i	(1)
	1035i/60	30	1035	1125	33.75	1920	2200	i	
1080i/60	1080i/59.94 1080sF/29.97	30/1.001	1080	1125	33.72	1920	2200	i sF	(1) (2)
	1080i/60 1080sF/30	30	1080	1125	33.75	1920	2200	i sF	(1) (2)
1080p/30	1080p/29.97	30/1.001	1080	1125	33.72	1920	2200	p	(2)
	1080p/30	30	1080	1125	33.75	1920	2200	p	
1080sF/25 (1080i/50)	1080sF/25 1080i/50	25	1080	1125	28.13	1920	2640	sF i	(2)
1080p/25	1080p/25	25	1080	1125	28.13	1920	2640	p	(2)
1080sF/24	1080sF/23.98	24/1.001	1080	1125	26.97	1920	2750	sF	(2)
	1080sF/24	24	1080	1125	27.00	1920	2750	sF	
1080p/24	1080p/23.98	24/1.001	1080	1125	26.97	1920	2750	p	(2)
	1080p/24	24	1080	1125	27.00	1920	2750	p	
720p/60	720p/59.94	60/1.001	720	750	44.96	1280	1650	p	(3)
	720p/60	60	720	750	45.00	1280	1650	p	
720p/50	720p/50	50	720	750	36.00	1280	1980	p	(3)
720p/30	720p/29.97	30/1.001	720	750	22.48	1280	3300	p	(3)
	720p/30	30	720	750	22.50	1280	3300	p	
720p/25	720p/25	25	720	750	18.75	1280	3960	p	(3)
720p/24	720p/23.98	24/1.001	720	750	17.98	1280	4125	p	(3)
	720p/24	24	720	750	18.00	1280	4125	p	
525i/60	525i/59.94	60/1.001	487	525	15.73	720	858	i	(4)
625i/50	625i/50	50	576	625	15.63	720	864	i	(4)

*1: Scanning abbreviations

i = Interlace

sF = Segmented Frame

p = Progressive

*2: Standards

(1) BTA S-001B, 2B, 4B complied with

(2) SMPTE 274M complied with

(3) SMPTE 296M complied with

(4) SMPTE 259M complied with

4.2 INPUT SIGNAL SYSTEMS

SDI input specification	Specification	
SDI input	HDTV	BTA S-004B and SMPTE 292M standards complied with, NRZI SDI signal
	SDTV	SMPTE 259M standard complied with, NRZI SDI signal
	Field (frame) frequency, 60.00/59.94 [Hz], etc. automatically scanned Automatic scanning of input format enabled	

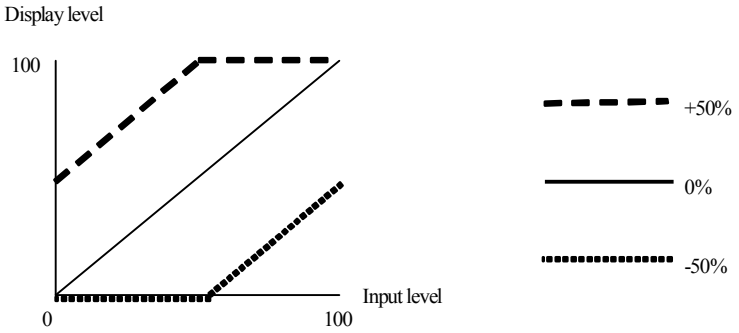
Analog input specification	Specification
HDTV YPbPr (or GBR) input	BTA S-001B, SMPTE 274M and SMPTE 296M standards complied with
	Field (frame) frequency, 60.00/59.94 [Hz], etc. automatically scanned Automatic scanning of input format enabled
	±10% analog signal reception accuracy 75-ohm input termination (can be set to ON or OFF) Y on Sync (or G on Sync) used for synchronization

4.3 DISPLAY SYSTEM

Display system	Specification
Liquid crystal	a-Si TFT LCD
Display colors	16,194,277 colors (when FRC is ON)
Contrast ratio	500: 1(Typ)
Response time	6ms (typ: all white 90% -> all black 10%)
Brightness	300cd/㎡(max)
Screen size	6.3 inches
Resolution	1024(H) × 768(V)Pixels
Image area	HDTV: 960(H) × 540(V) Pixels、 SDTV(525/60i): 720(H) × 487(V) Pixels、 SDTV(625/50i): 720(H) × 574(V) Pixels
Pixel pitch	0.126(W) × 0.126(H) mm

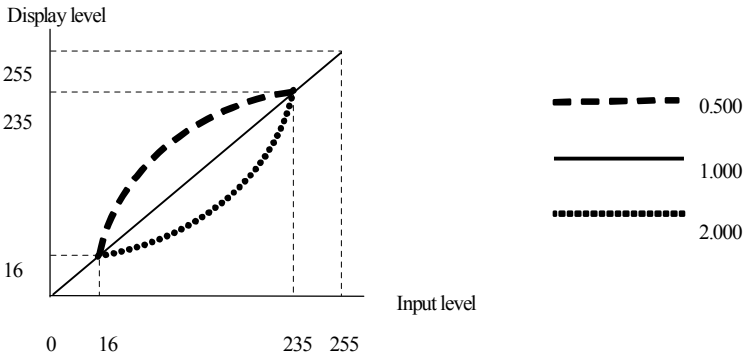
4.4 CONCERNING THE ADJUSTMENT VALUES

- Brightness The offset level of the luminance signal can be varied in the range from -50.00 to +50.00%.



- Y gamma The Y gamma can be corrected in the range from 0.500 to 2.000.

Y gamma correction



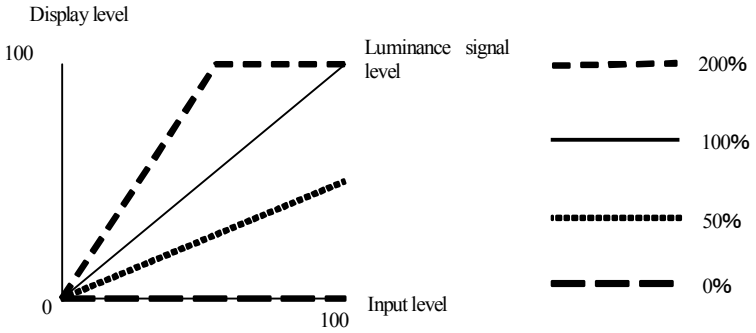
Definitions of input levels used in this section

Input level SDI		0	100
SDI	Y	Digital value: 64	Digital value: 940
	Pb/Pr	Digital value: 64	Digital value: 960
Analog	Y	0mV	+700mV
	Pb/Pr	-350mV	+350mV

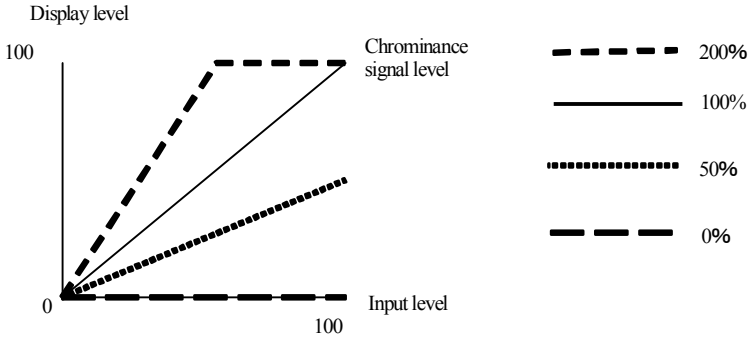
Definitions of display levels used in this section

Display level	0	100
	Minimum level	Status corresponding to input level of 100 in initial status

- Contrast The level of the luminance signal can be varied in the range from 0.0 to 200.0%.

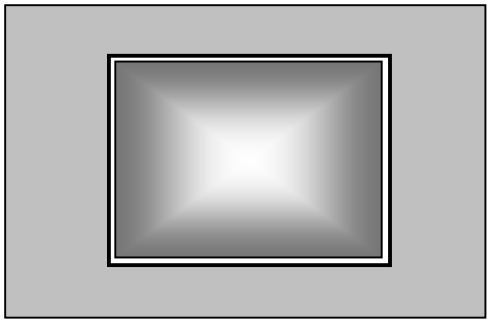


- Chroma, Pb (Cb), Pr (Cr) The level of the chrominance signals can be varied in the range from 0.0 to 200.0%.

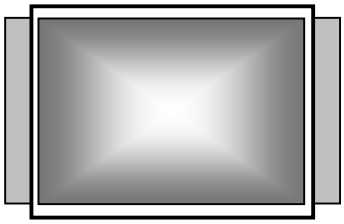


4.5 MAGNIFICATION FUNCTION

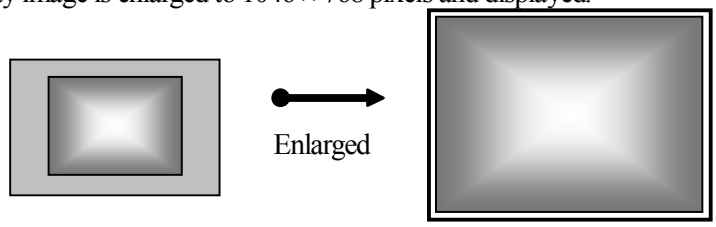
- With a size of 1920 × 1080 pixels
  The image of 1024 × 768 pixels at the center is cut out from the image area and displayed.



- With a size of 1280 × 720 pixels
  The image of 1024 × 720 pixels at the center is cut out from the image area and displayed.



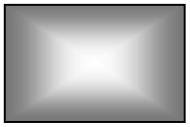
- With a size of 720 × 487 or 720 × 576 pixels
  The display image is enlarged to 1046 × 768 pixels and displayed.



Note: Explanation of displays

This is the area in which the image is displayed.

This is the LCD screen.

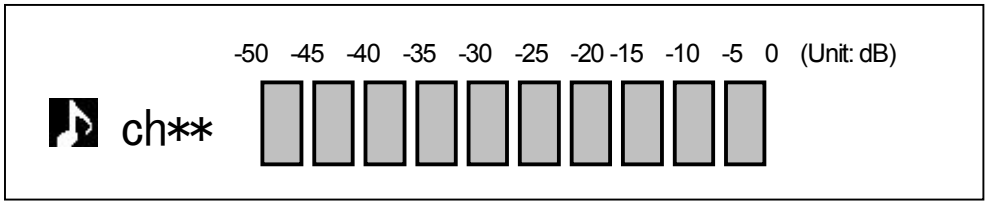


This is the image which is magnified and displayed.

4.6 CONCERNING THE AUDIO LEVEL METER

The audio level meter indicates the audio levels as follows.

Audio standards: BTA S-006B and SMPTE 272M-A standards



Caution

Audio levels below -50 dB are not displayed. The audio level meter appears only when SDI signals have been selected.

4.7 GENERAL SPECIFICATIONS

The following settings are established when the DM-3005A is shipped and initialized.

Common setting items

The settings for the following items are common to the SDI A, SDI B and analog channels.

Setting item	Setting and adjustment range	Setting
Input	SDI A, SDI B, Analog	SDI A
Display magnification	ON/OFF	OFF
Marker	ON/OFF (Types of markers: FRAME, CENTER, 4: 3, 13: 9, 14: 9, 2.35: 1, 1.85: 1, 1.66: 1)	OFF (Types of markers: FRAME, CENTER)
Mask	Line, Half, Mask	Line
Half Turn	ON/OFF	OFF
Overlay	ON/OFF	ON
Animation	ON/OFF	ON
Audio Channel	ch1・ch2, ch3・ch4, ch5・ch6, ch7・ch8, ch9・ch10, ch11・ch12, ch13・ch14, ch15・ch16	ch1・ch2
Audio Level Meter	ON/OFF	ON
Time Code	ON/OFF	ON
Information	ON/OFF	ON

Setting items different for each channel

The settings for the following items are set separately for the SDI A, SDI B and analog channels.

Setting item	Setting and adjustment range	Setting
Mono	ON/OFF	OFF
Bright	-50.0 to +50.0%	0.00%
Contrast	0.0 to 200.0%	100.0%
Pb(Cb)	0.0 to 200.0%	100.0%
Pr(Cr)	0.0 to 200.0%	100.0%
Y Gamma	0.5000 to 2.000	1.000
Peaking	OFF, 1 to100	OFF
Format	SDI: All 15 types Analog: All 13 types	Auto
Filter	ON/OFF	ON
FRC	ON/OFF	OFF
Color Space	YPbPr/GBR	YPbPr
Green	ON/OFF	ON
Blue	ON/OFF	ON
Red	ON/OFF	ON
H Delay	ON/OFF	ON
V Delay	ON/OFF	ON
Information Color	Color All 63 colors (black excluded) for G: 0 to 3 B: 0 to 3 R: 0 to 3	White3 (G: 3, B: 3, R: 3)
Marker Color	Color All 64 colors for G: 0 to 3 B: 0 to 3 R: 0 to 3	White3 (G: 3, B: 3, R: 3)
Time Code Color	Color All 63 colors (black excluded) for G: 0 to 3 B: 0 to 3 R: 0 to 3	White3 (G: 3, B: 3, R: 3)

4.8 GENERAL SPECIFICATIONS

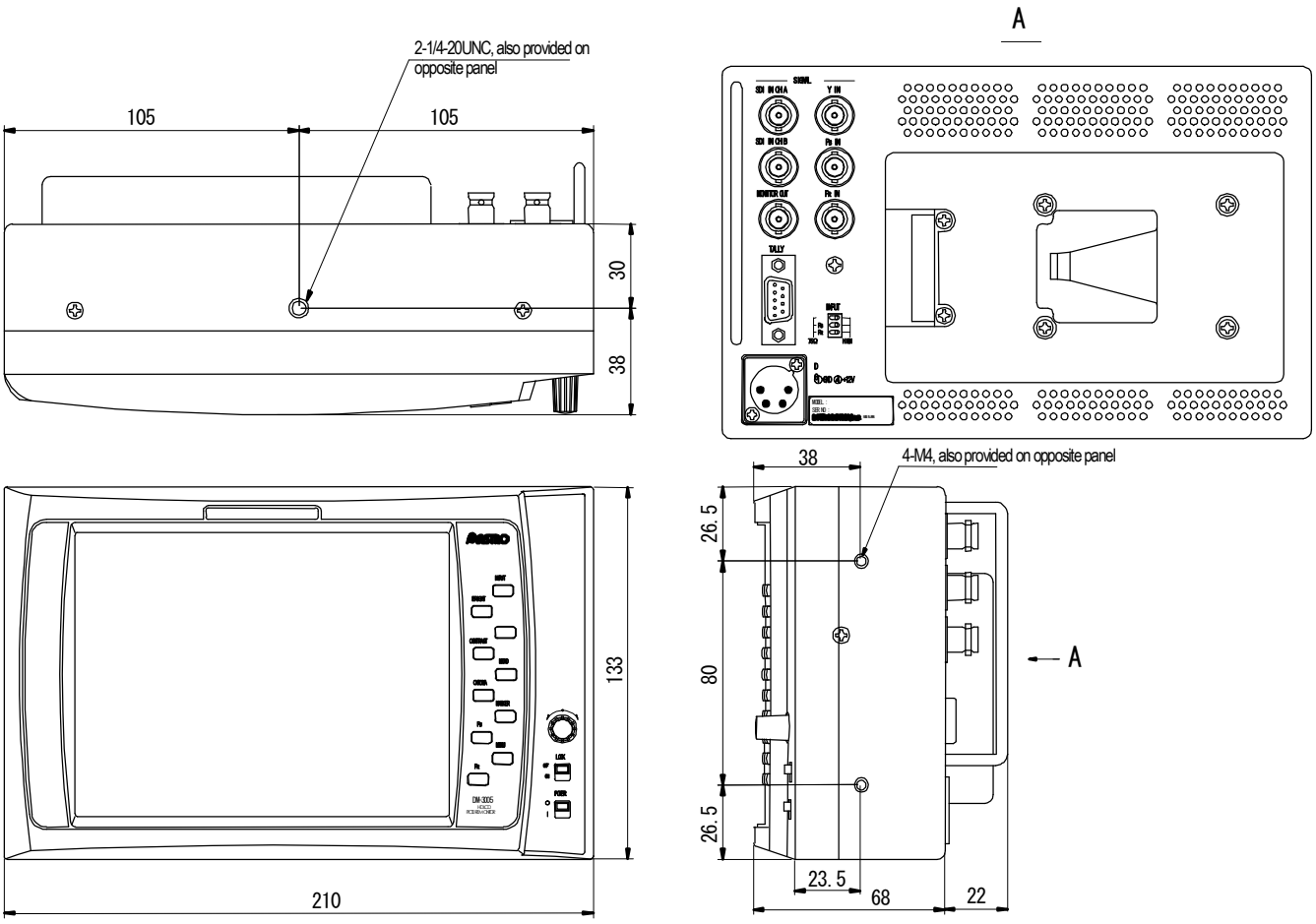
DM-3005A (main unit) operating environment and ratings

Operating temperature	0 to 40°C
Storage temperature range	-10 to 70°C
Operating humidity	30 to 80% RH (ambient temperature of 0 to 40°C and no condensation)
Storage humidity range	10 to 90% RH (ambient temperature of 0 to 40°C and no condensation)
Rated voltage	DC10-18V
Power consumption (main unit)	18W(typ)
Service life	3,500 hours (when LCD backlight brightness is halved)
Dimensions	210(W) × 133(H) × 68 (D) mm (excluding protrusions) 210(W) × 133(H) × 90 (D) mm (including protrusions)
Weight	Approx. 1.3 kg

Accessory AC/DC adapter operating environment and ratings

Rated output voltage	12V±5%	
Rated output current	3.0A	
Maximum output power	36W	
Input voltage	Rating: 100 to 240V (AC)	
Input frequency	Rating: 50/60Hz	
Efficiency	70 (MIN)%	
Operating temperature	0 to 40°C	
Storage temperature range	10 to 90%RH	
Operating humidity	-10 to 70°C	
Storage humidity range	5 to 95%RH	
Output plug polarities	Pin 1	GND
	Pin 2	NC
	Pin 3	NC
	Pin 4	+12V

4.9 OUTLINE DRAWINGS



CHAPTER 5 STANDARD AND OPTIONAL ACCESSORIES

5.1 STANDARD ACCESSORIES

DM-3005 instruction manual	1 copy
Clear bumpon	4 pcs
M4 screws (for attaching rack-mounting fixtures)	4 pcs
AC/DC adapter	1 pc (*1)

5.2 OPTIONAL ACCESSORIES

Provided for the DM-3005 as the optional accessories of the LCD unit (main unit) are rack-mounting fixtures, etc.

Additional optional accessories are released from time to time: contact an Astrodesign sales representative for the latest information.

For details on the type of monitor in which the battery adapter for an Anton Bauer battery can be installed, contact an Astrodesign sales representative.

Product	Model name
Hard-shell	DM-3005 - 02
AC/DC	DM-3000A - 03 (*1)
Single	DM-3005 - 04
Double	DM-3005 - 05
Light-shielding	DM-3005 - 08

*1: The AC/DC adapter listed among the optional accessories is equivalent to the one listed in the standard accessories.

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DM-3005A Instruction Manual **No.3005A-C01-47-01-0**

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