DM-3015
HD LCD PICTURE MONITOR

Instruction Manual

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First Edition

Software Version 1.00

⬤ ASTRO
ASTRODESIGN, INC.

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INTRODUCTION

Thank you for purchasing the DM-3015 HD LCD PICTURE MONITOR.

This manual presents the operating procedures for using the DM-3015, as well as safety precautions and other information.

Operating the DM-3015 incorrectly may result in an accident. Therefore, be sure to read this manual to ensure safe and proper operation.

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

SAFETY PRECAUTIONS

⚠ WARNING

Main Unit

- Do not excessively jar the unit or throw it. Doing so may result in liquid crystal leakage, equipment failures, ruptures, heat radiation, or fire.
- Do not use the unit in locations where there is a risk of ignition or explosion.
- Do not place the unit in a high-pressure container or a cooking oven such as a microwave oven. Doing so may result in equipment heating, smoking, or fire, or may destroy circuit components.
- The unit contains high-voltage components. Do not attempt to disassemble, repair, or modify the unit, as this may result in electric shock or burns, or may cause an equipment failure.
- If thunder or lightning occurs while the unit is being used outside, immediately turn off the power, disconnect the power cord from the unit, and move to a safe location.

Power Cord

- Always hold the power cord by its plug when removing it.
- Do not excessively bend or twist the power cord when using it. Doing so may result in a fire.
- Do not set anything heavy on the power cord. Doing so may damage the power cord, resulting in fire or electric shock.

Foreign Objects

- Do not spill any liquids into the unit, or drop any flammable or metallic objects into it. If the unit is used in such a condition, fire or electric shock may result, or the equipment may be damaged.

⚠ Caution

Power Supply

- The power supply in this unit is 10-18V DC ±5%.
  We recommend using the included AC/DC adapter to avoid equipment failures and other problems. If you do use a different power supply, make sure the supply voltage is correct.
- After turning off the power supply, do not turn it back on immediately. Doing so may result in an equipment failure.

Liquid Crystal Display

- Some of the pixels in the LCD may be missing (bright spots, dead spots, etc.) due to the properties of the liquid crystal.
- Do not touch any liquid crystal which leaks out of the liquid crystal panel.
  If the liquid crystal panel is accidentally damaged and the liquid (liquid crystal) inside it leaks out, do not put it in your mouth, inhale it, or put it on your skin.
  If the liquid crystal does get into your eyes or mouth, immediately rinse with water. If it gets on your skin or clothes, immediately wipe it off using alcohol, then clean yourself with soap. Liquid crystal may damage your skin or clothes if it remains on them.
- Be careful not to be injured by the glass in the liquid crystal panel if it breaks.
  If the liquid crystal panel breaks, be very careful not to cut your fingers on glass fragments. Touching a glass shard may result in minor injury.
- The liquid crystal panel is an extremely high-precision device, so take the following precautions when handling it:
  1) Wiping the liquid crystal panel with benzene or paint thinner may alter its characteristics.
  2) If water (or salt water) is left on the liquid crystal panel, discoloration or spotting may result.
  3) If the liquid crystal panel is directly exposed to UV rays for an extended length of time, the polarization plate may turn brown and the display quality may be adversely affected (reduced contrast, etc.).
  4) If moisture enters the liquid crystal panel due to condensation or other factors, color variations may occur.
  5) Directly hitting the liquid crystal panel or banging it may result in fractures and other damage.
  6) Do not take the liquid crystal panel apart. It is very dangerous if the liquid crystal leaks out and contacts your skin.
- Be very careful in handling the liquid crystal protective panel.
  Fingerprints and dirt on the liquid crystal protective panel should be lightly wiped off using an OA equipment cleaner or similar product. If you press too hard, you may scratch the liquid crystal protective panel or otherwise damage it.

Shock Impact

- The DM-3015 contains precision equipment which may be damaged by shock impacts, so be very careful when moving the equipment.
- Do not drop the equipment.

Installation and Usage Location

- Installing the equipment in any of the following locations may result in an accident or equipment damage.
  1) Locations in which the ambient temperature is outside the range of 0 to 40°C (see note 1)
  2) Locations in which the ambient humidity is outside the range of 30 to 80%RH.
  3) Locations which are close to an air conditioner and are subject to abrupt changes in temperature or condensation
  4) Locations which are exposed to direct sunlight (see note 2)
  5) Locations which are very dusty or exposed to corrosive gas
  6) Locations which are subject to strong magnetic fields
  7) Locations which could be splashed by water, oil, chemicals, or the like
  8) Locations which are subject to vibrations through the floor
  9) Locations which are unstable
- In order to ensure proper equipment operation, be sure to follow these instructions:
  1) Do not set anything heavy (monitor, etc.) on the equipment.
  2) Avoid placing objects around the equipment.
     Note 1:　If the liquid crystal panel's surface temperature exceeds 60°C, the backlight or other components may be damaged.
     Note 2:　If the liquid crystal panel is directly exposed to UV rays for an extended length of time, the polarization plate may turn brown and the display quality may be adversely affected (reduced contrast, etc.).

CHAPTER 1: ABOUT THE DM-3015

The model DM-3015 is a slim-line, lightweight and portable LCD picture monitor designed for monitoring images shot in relay broadcasts, studios and other locales and for performing non-linear editing.

It includes a variety of functions, such as brightness adjustment, contrast adjustment, chroma adjustment, and marker displays. The DM-3015 supports 23 different HDTV input signal formats, as well as two SDTV video formats.
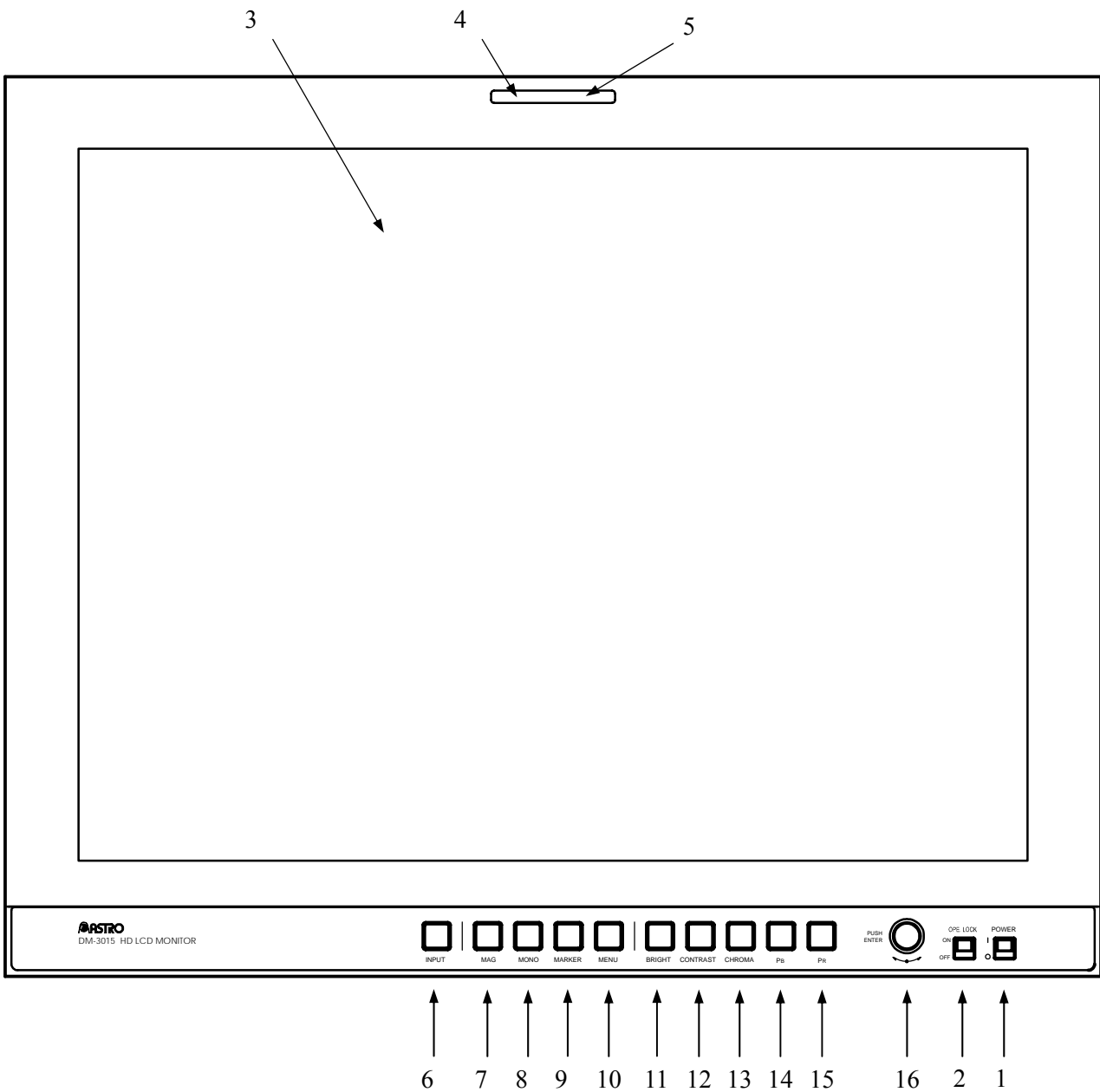
DM-3015 OVERVIEW

- 15-inch a-Si TFT liquid crystal panel (viewing angle range: 170° horizontal, 170° vertical, 1024 × 768 XGA)
- Supports HD-SDI, SD-SDI, and YPbPr HD-analog signal input, and GBR HD-analog signal input (*)
  (HD-analog signal is Y or G OnSync.)
- Supports 25 different video formats
- Supported HD-SDI standards: Complies with SMPTE292M and BTA S-004B standards (1.485 Gbit/s SDI input)
  Supported SD-SDI standard: Complies with SMPTE259M standard (270 Mbit/s SDI input)
  Analog input and supported format standards: Complies with SMPTE274M, SMPTE296M, and BTA S-001B
- SDI IN, SDI MONITOR OUT, and HD-analog input (ANALOG Y/G, ANALOG Pb/B, ANALOG Pr/R) jacks
- Brightness, contrast, chroma, filter, monochrome, and Y gamma display functions
- 4:3 display function
- Marker display function
  (FRAME, CENTER, USER, 95%, 93%, 88%, 80%, 4:3, 13:9, 14:9, 2.35:1, 1.85:1, 1.66:1)
- One-touch operations using front switches to control input channels, 4:3 display, monochrome, blue only, and to show/hide markers
- Remote controller settings can be customized by user (input signal switching, marker ON/OFF switching, mask ON/OFF switching, tally lighting, etc.)
- Input signal automatic tracking capability
- Frame rate 1/1.000 and 1/1.001 automatic tracking and input signal detection function
- Select either 6500K or 9300K color temperature (fine adjustments of color tone and gradations also possible)
- Input channel CRC error detection function (with HD-SDI input)
- Time code (VITC) display (with HD-SDI input)
- Audio level meter display (with SDI input)
- Panel lock/setting saving function
- Data can be saved and loaded as user data
- Small and lightweight
- DC power supply input (10-18V ±5%)

* GBR HD-analog signal is for quick display.

CHAPTER 2: PART NAMES

## 2.1   DM-3015 Front Side and Part Names

DM-3015 Front Side

Front Side Part Names

No.	Name	Function	
1	POWER Switch / LED	Turns the power supply ON/OFF (green light on while power is on).	
2	LOCK Switch / LED	Locks panel and simultaneously saves settings. During the saving process, ⌛ Wait is displayed in the lower right corner of the screen. Saved values are loaded when the power is turned on. Do not turn the power off while data are being saved. During the saving process, if the LOCK Switch is switched off or if the power is turned off, the default values may be set instead of the saved values the next time the power is turned on (yellow light on while panel is locked). While the panel is locked, only the remote controllers can be used.	
3	Liquid crystal display	Displays video.	
4	TALLY 1	Tally light (red) Controlled by remote controller (contact type)	
5	TALLY 2	Tally light (green) Controlled by remote controller (contact type)	
6	INPUT switch	Toggles between SDI A and SDI B input. Switches to analog input if held down for one second or longer.	
7	MAG switch	Toggles the 4:3 display ON/OFF.	
8	MONO switch	This switch moves through the following cycle one step at a time each time it is pressed: Monochrome→ Blue only → Color (*). (See Section 3.3.3.) The selection Monochrome→ Blue only → Color is only available if YPbPr is selected in ▦ Color Space . (See Section 3.4)	
9	MARKER switch	Toggles the marker display ON/OFF. The user marker setting screen appears when this switch is held down for one second or longer.	
10	MENU switch	Toggles the menu display ON/OFF. (See Section 3.3.2)	
11	BRIGHT switch	With YPbPr (ColorSpace)	Enters brightness adjustment. When held down for one second or longer, enters Y gamma adjustment.
		With GBR (ColorSpace)	Enters brightness adjustment.
12	CONTRAST switch	Enters contrast adjustment. When held down for one second or longer, enters peaking adjustment.	
13	CHROMA switch	With YPbPr (ColorSpace)	Enters chroma adjustment.
		With GBR (ColorSpace)	(Not used)
14	PB switch	With YPbPr (ColorSpace)	Enters Pb (Cb) adjustment.
		With GBR (ColorSpace)	(Not used)
15	PR switch	With YPbPr (ColorSpace)	Enters Pr (Cr) adjustment.
		With GBR (ColorSpace)	(Not used)
16	Adjustment dial	Adjusts/selects settings.	

* Color is essentially a state in which Green, Blue and Red are all on. However, if Green, Blue, and Red are turned off on the MENU screen, the setting is color.

2.2   DM-3015 Back Side and Part Names

DM-3015 Back Side

Back Side Part Names
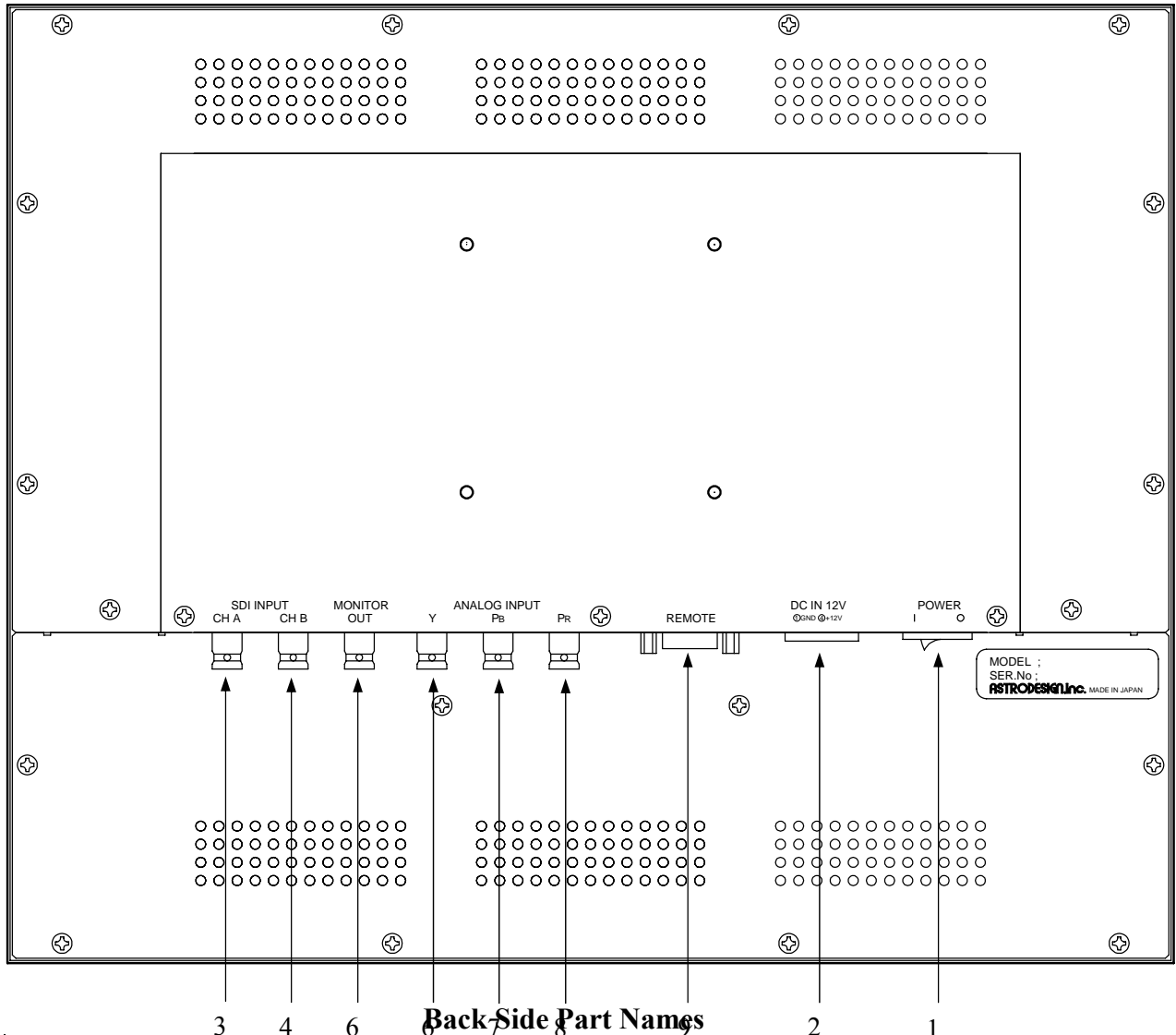
No.	Name	Function
1	POWER switch	Used to turn the power ON and OFF.
2	Power connector (*1)	Canon connector, DC power input connector (GND 1pin, DC IN 4pin)
3	SDI IN CH A	HD-SDI and SD-SDI signal input jack
4	SDI IN CH B	HD-SDI and SD-SDI signal input jack
5	MONITOR OUT	SDI input signal quick check output jack SDI A video is output when SDI A input is selected. SDI B video is output when SDI B input is selected.
6	Y IN	HD-analog Y/G signal input jack If input is analog, it is synchronized by Y/G.
7	Pb IN	HD-analog Pb/B signal input jack
8	Pr IN	HD-analog Pr/R signal input jack
9	Remote controller (*2)	D-sub 9pin (female)

*1 Power connector (Number 2)
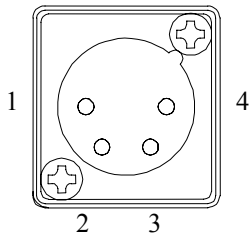
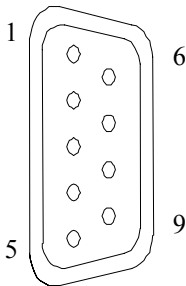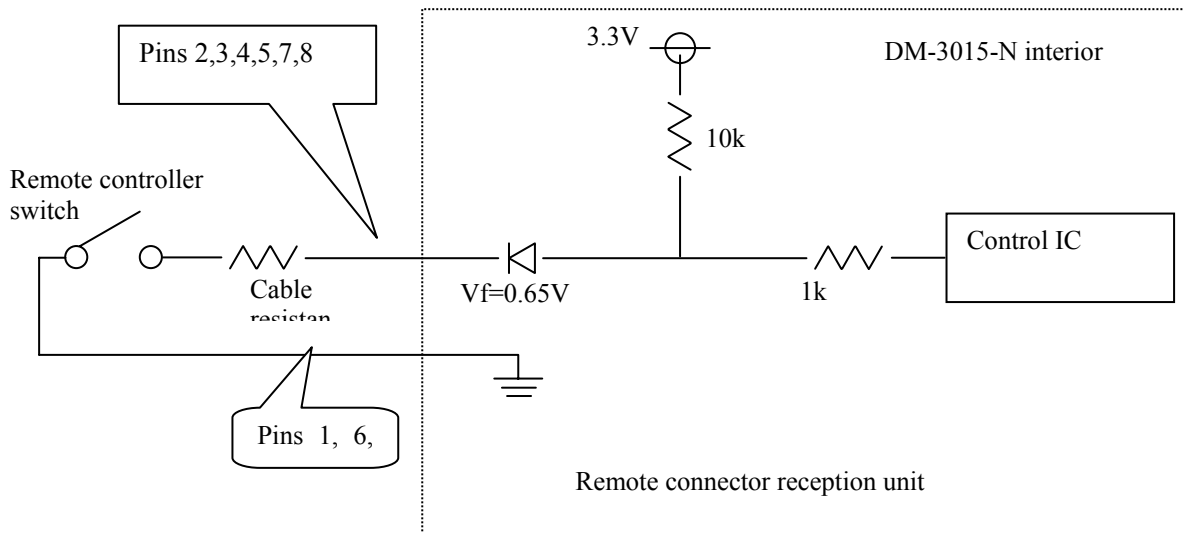| Pin No.	Function
1	GND
2	NC
3	NC
4	DC IN (10-18V)

*2 Remote controller (Number 9)
  The remote controller is enabled when *LOCK Switch* is ON.
  See Section 4.7 for details on the remote controller.

Pin No.	Signal	Default
1	GND	--
2	Remote Control 5	TALLY (G)
3	Remote Control 2	Marker ON/OFF
4	Remote Control 3	H Mask ON/OFF
5	Remote Control 4	Mask ON/OFF
6	GND	--
7	Remote Control 6	TALLY (R)
8	Remote Control 1	Input A/B
9	GND	--

Pins 2,3,4,5,7,8

3.3V

DM-3015-N interior

10k

Remote controller switch

Cable resistan

$V_f=0.65V$

1k

Control IC

Pins 1, 6,

Remote connector reception unit

* Design the cable resistance to be 50 ohms or less.

CAUTION Do not disconnect or connect the remote controller while the power is on.

CHAPTER 3: USING THE DM-3015

3.1   Connecting the DM-3015

The DM-3015 connection procedure is described below.

(1) Connecting the power supply
Check that the main unit's POWER switches at both the front and back sides are at the OFF position, and then connect the Cannon connector of the AC/DC adapter to the power connector (2 in the back side diagram) of the DM-3015.
Before proceeding, make sure the connector shape is correct.

(2) Connecting input signals
- SDI signal input
  For SDI signal input, connect the input source to *SDI IN* using a BNC coax cable. *SDI IN* is the SDI signal input. *MONITOR OUT* is an output for quickly checking the input SDI. For HD-SDI signal input, use a serial signal which complies with BTA S-004B. In addition, use a coax cable (5C-FB equivalent) with bandwidth exceeding 1.5 GHz. For SD-SDI signal input, use a serial signal which complies with SMPTE259M (270 Mbit/s).
- Analog signal input
  For HD-analog signal input, YPbPr (or GBR) signals are input to their respective analog jacks. For HD-analog input, use YPbPr (or GBR) signals which comply with BTA S-001B. The Y (or G) signal is used for synchronization. Analog input is allowed for HDTV only.
  Note: GBR is used for quick display; it does not permit chroma, monochrome, or Y gamma adjustments.

(3) Connecting the remote controller
Make sure the main unit *POWER Switch* is off, then connect the remote controller to the *Remote Connecto*r (9 on the back side diagram) on the DM-3015. Before proceeding, make sure the connector shape is correct.

3.2   Using the DM-3015

The liquid crystal panel is covered with a protective film. Remove this film before using the DM-3015.
After checking the connections, turn on the power of the DM-3015 by first setting the POWER switch on the back side to the ON position and then setting the POWER switch on the front side to the ON position. The POWER LED now lights, and an image appears on the monitor. If the *POWER LED* does not turn on, check the connections again.
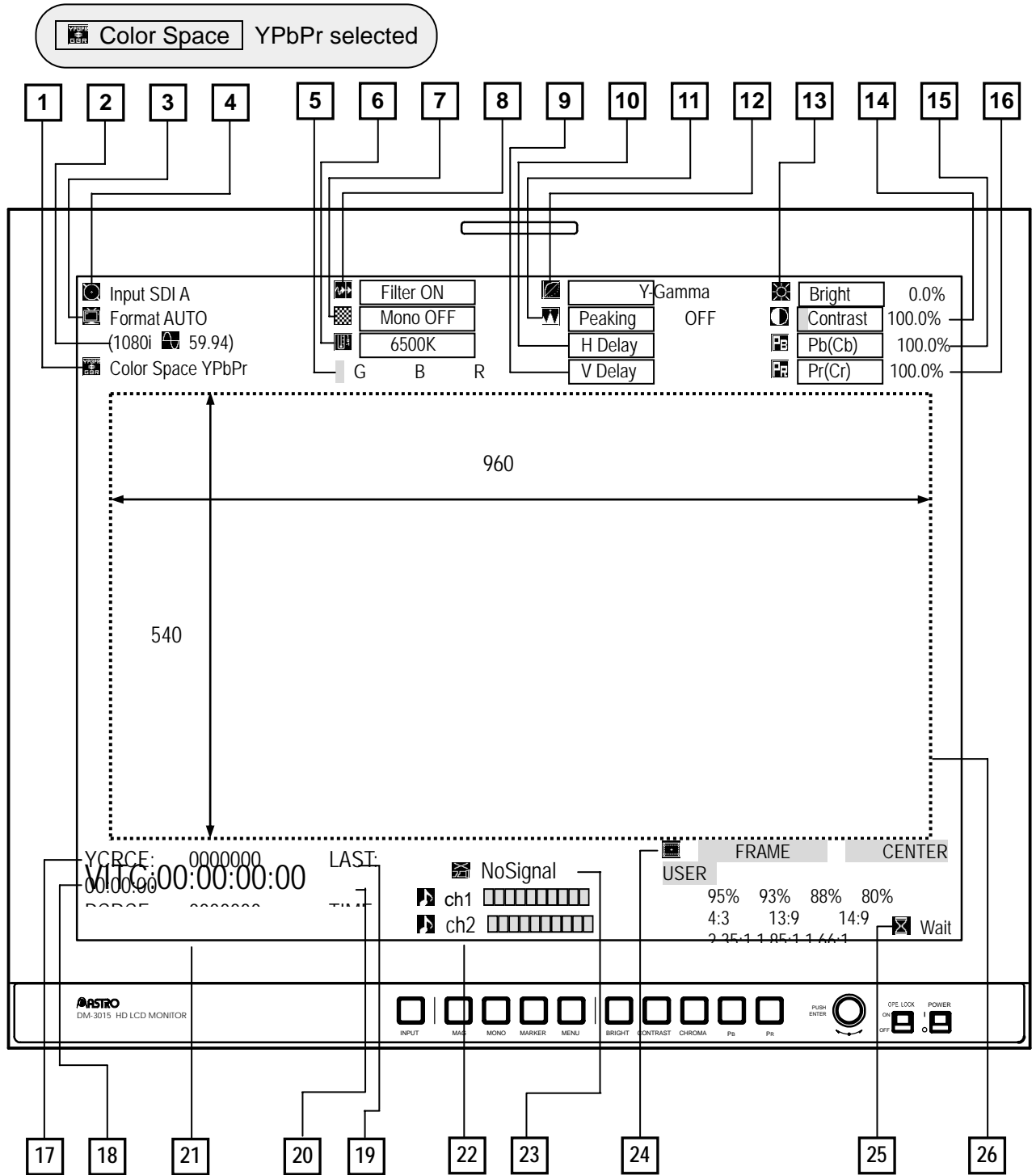
Use *MONITOR OUT* to quickly check the SDI input signal. During analog input, nothing will appear on the screen if no synchronization signal is input as the Y (or G) signal. For levels, check ARIB BTA S-001, etc.
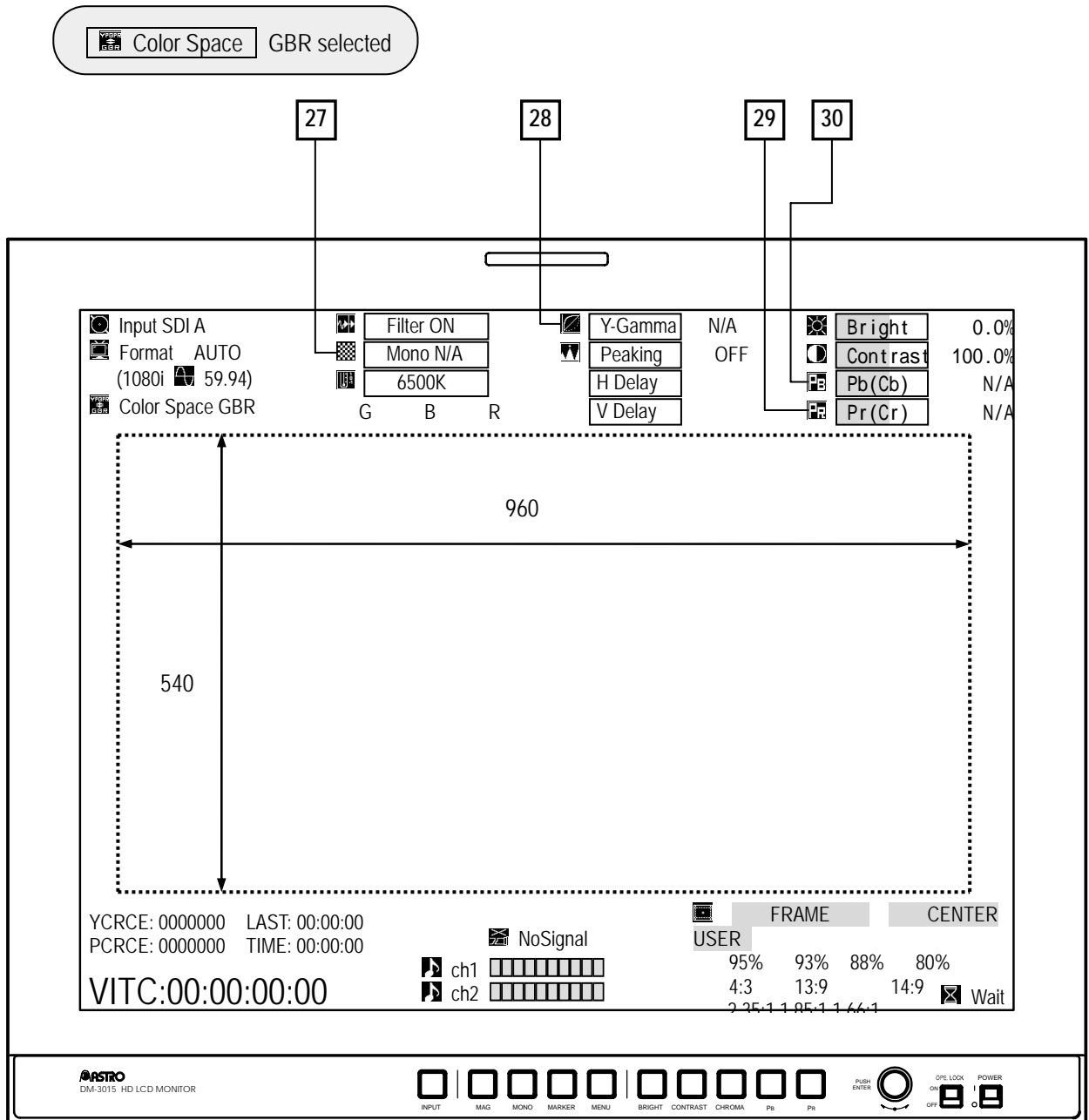
If there is no input signal, the video display area will be black and   ⊠ NoSignal   will appear in red on the screen.

3.3   Screens

The DM-3015 screen displays and setting procedures are described below.

3.3.1   Normal Screen

Color Space YPbPr selected

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

Input SDI A
Format AUTO
(1080i 59.94)
Color Space YPbPr

Filter ON
Mono OFF
6500K

G   B   R

Y Gamma
Peaking   OFF
H Delay
V Delay

Bright   0.0%
Contrast   100.0%
Pb(Cb)   100.0%
Pr(Cr)   100.0%

960

540

YCRCE: 0000000
VITC:00:00:00:00
00:00:00
DGRCE: 0000000

LAST:

TIME

NoSignal
ch1
ch2

FRAME   CENTER
USER
95%   93%   88%   80%
4:3   13:9   14:9
2.35:1 1.85:1 1.66:1   Wait

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INPUT   MAG   MONO   MARKER   MENU   BRIGHT   CONTRAST   CHROMA   Pb   Pr   PUSH ENTER   OPE. LOCK   POWER

| 17 | 18 | 21 | 20 | 19 | 22 | 23 | 24 | 25 | 26 |

Color Space GBR selected

No.	Item	Description
1	Color Space	Indicates the input signal color space.
2	(frequency)	Indicates the input signal frequency. If there is no input signal (No Signal), then ***** is displayed. (For format details, see Section 4.1.)
3	Format	Indicates the selected format. The information in parentheses on the line below it indicates the input signal format and field (frame) frequency. If an analog signal is selected, it will be treated as 1080i even if a 1035i signal is input. If there is no input signal (No Signal), then ***** is displayed. (For format details, see Section 4.1.) If there is no input signal or if the set format and the input signal format are not the same, then Format is displayed in red.
4	Input	Indicates the selected input channel (SDI A / SDI B / Analog).

No.	Item	Description
5	G B R	Indicates ON/OFF separately for G, B, and R. If any of these is displayed in reverse video, then it is ON.
6	6500K / 9300K	Indicates the set liquid crystal color temperature.
7	Mono	Indicates monochrome ON/OFF.
8	Filter	Indicates filter ON/OFF.
9	V Delay	Indicates that V Delay is ON. Not displayed if OFF.
10	H Delay	Indicates that H Delay is ON. Not displayed if OFF.
11	Peaking	Indicates the peaking setting.
12	Y-Gamma	Indicates the Y gamma setting. Only when YPbPr is selected in Color Space (See Section 3.4)
13	Bright	Indicates the brightness setting. (See Section 4.4)
14	Contrast	Indicates the contrast setting. (See Section 4.4)
15	Pb (Cb)	Indicates the Pb (Cb) setting. (See Section 4.4) Only when YPbPr is selected in Color Space (See Section 3.4)
16	Pr (Cr)	Indicates the Pr (Cr) setting. (See Section 4.4) Only when YPbPr is selected in Color Space (See Section 3.4)
17	YCRCE	Checks for CRC errors in the Y signal. The error count is displayed. If an error occurs, YCRCE is shown in red for one second. Note: During SD-SDI signal input or analog signal input, CRC errors are not counted. In addition, they are not counted for one second after the input signal is changed using the *INPUT switch*.
18	PCRCE	Checks for CRC errors in the Pb and Pr signals. The error count is displayed. If an error occurs, PCRCE is shown in red for one second. Note: During SD-SDI signal input or analog signal input, CRC errors are not counted. In addition, they are not counted for one second after the input signal is changed using the *INPUT switch*.
19	LAST	Indicates the elapsed time since the last error.
20	TIME	Indicates the elapsed time since the DM-3015 was started or since the error count was reset.
21	VITC	Indicates the time code (VITC). Displayed only when SDI signal is selected. Note: The time code is accurately displayed for HD-SDI, but may not be accurately displayed for SD-SDI.
22	ch *	Indicates the selected audio channel. (See Section 4.6) Displayed only when SDI signal is selected.
23	NoSignal	If the set signal and input signal are different, then NoSignal is displayed in red.
24	(Marker)	List of available markers. The currently selected marker name is shown in reverse video. <Marker types> FRAME, CENTER, USER, 95%, 93%, 88%, 80%, 4:3, 13:9, 14:9, 2.35:1, 1.85:1, 1.66:1 Note: During SD-SDI signal input, markers 4:3, 13:9, and 14:9 are not displayed even if the marker name is shown in reverse video. When SD Under Scan is OFF, FRAME markers are not displayed even if the marker name is shown in reverse video. If AUTO is selected for format and there is no input signal, a 1080 marker is displayed.
25	Wait	Indicates that data saving is in progress.
26		The dotted line area in the diagram is the video area. Normally, the screen size is 960×540 (pixels). If the format is 525i/60 or 625i/50, the screen size is 1024×768 (pixels). However, if SD Under Scan is ON, then the respective screen sizes are 720×487 (pixels) and 720×574 (pixels). (See Section 3.4)

No.	Item	Description
27	▓ Mono N/A	Indicates that monochrome cannot be set. The default value is set temporarily. Only when GBR is selected in ▓ Color Space (See Section 3.4)
28	◪ Y-Gamma N/A	Indicates that Y gamma cannot be set. The default value is set temporarily. Only when GBR is selected in ▓ Color Space (See Section 3.4)
29	▦ Pb (Cb) N/A	Indicates that Pb (Cb) cannot be set. The default value is set temporarily. Only when GBR is selected in ▓ Color Space (See Section 3.4)
30	▦ Pr (Cr) N/A	Indicates that Pr (Cr) cannot be set. The default value is set temporarily. Only when GBR is selected in ▓ Color Space (See Section 3.4)

3.3.2　Menu Screen

The following screen is displayed when the *MENU switch* is pressed. Turn the *Adjustment dial* to view the current settings.
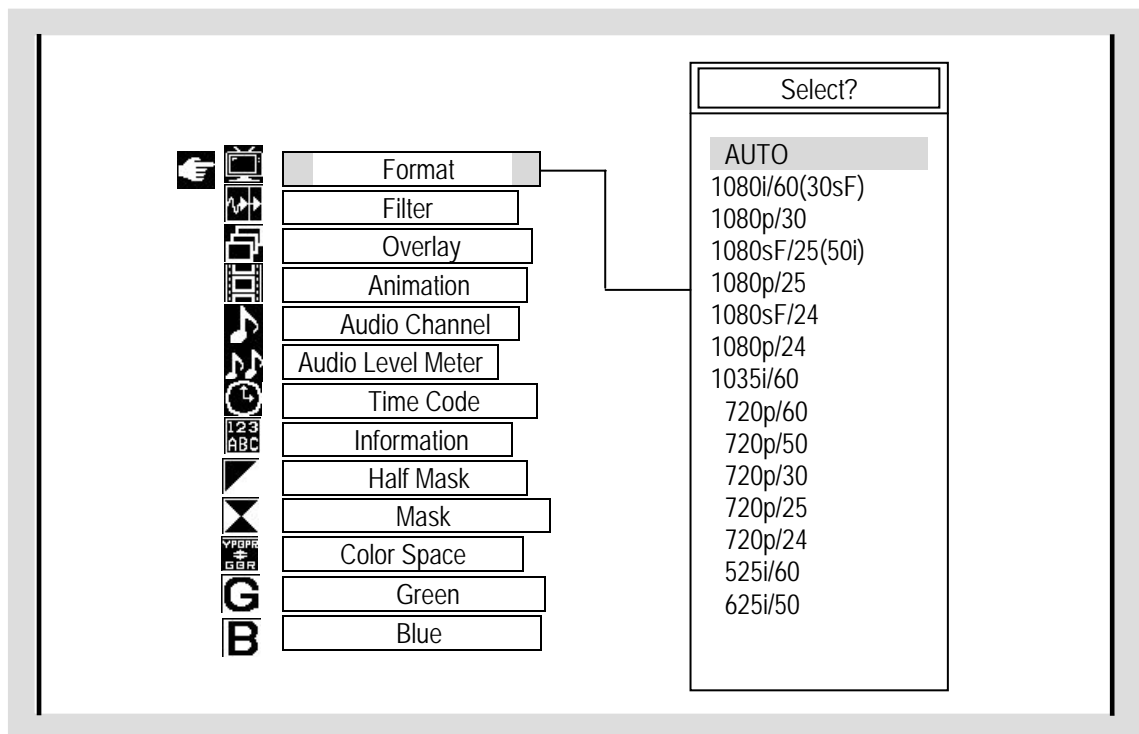
Item			Description
	Format		Indicates the format setting. (See Section 4.1)
	Filter		Indicates the filter setting (ON/OFF).
	Overlay		Indicates the video setting on the menu screen (ON/OFF).
	Animation		Indicates the icon animation setting (ON/OFF).
	Audio Channel	(*)	Indicates the audio channel setting.
	Audio Level Meter	(*)	Indicates the audio level meter setting (ON/OFF).
	Time Code	(*)	Indicates the time code setting (ON/OFF).
	Information		Indicates the information setting (ON/OFF).
	Half Mask		Indicates the half mask setting (ON/OFF).
	Mask		Indicates the mask setting (ON/OFF).
	Color Space		Indicates the color space setting (YPbPr/GBR).
	Green		Indicates the Green setting (ON/OFF).
	Blue		Indicates the Blue setting (ON/OFF).
	Red		Indicates the Red setting (ON/OFF).
	Color Temperature		Indicates the color temperature setting (6500K/9300K).
	H Delay		Indicates the H Delay setting (ON/OFF).
	V Delay		Indicates the V Delay setting (ON/OFF).
	SD Under Scan		Indicates the SD format under scan setting (ON/OFF).
	Remote Control 1		Indicates the Remote Controller 1 setting. (See Section 4.7)
	Remote Control 2		Indicates the Remote Controller 2 setting. (See Section 4.7)
	Remote Control 3		Indicates the Remote Controller 3 setting. (See Section 4.7)
	Remote Control 4		Indicates the Remote Controller 4 setting. (See Section 4.7)
	Remote Control 5		Indicates the Remote Controller 5 setting. (See Section 4.7)
	Remote Control 6		Indicates the Remote Controller 6 setting. (See Section 4.7)
	Load User Data		Loads user data.
	Save User Data		Saves user data.
	Error Reset		Resets the CRC error count.
	Channel Reset		Resets the currently selected channel setting for the current user.
	Factory Default		Resets all channel settings for the current user.

* Cannot be set when analog signal is selected.

3.3.3　LCD Adjustment Screen

The following screen is displayed when the *MONO switch* is held down.
Separate settings for the G brightness, B brightness, R brightness, G contrast, B contrast, R contrast, G gamma, B gamma and R gamma parameters are held for each color temperature (6500K/9300K).
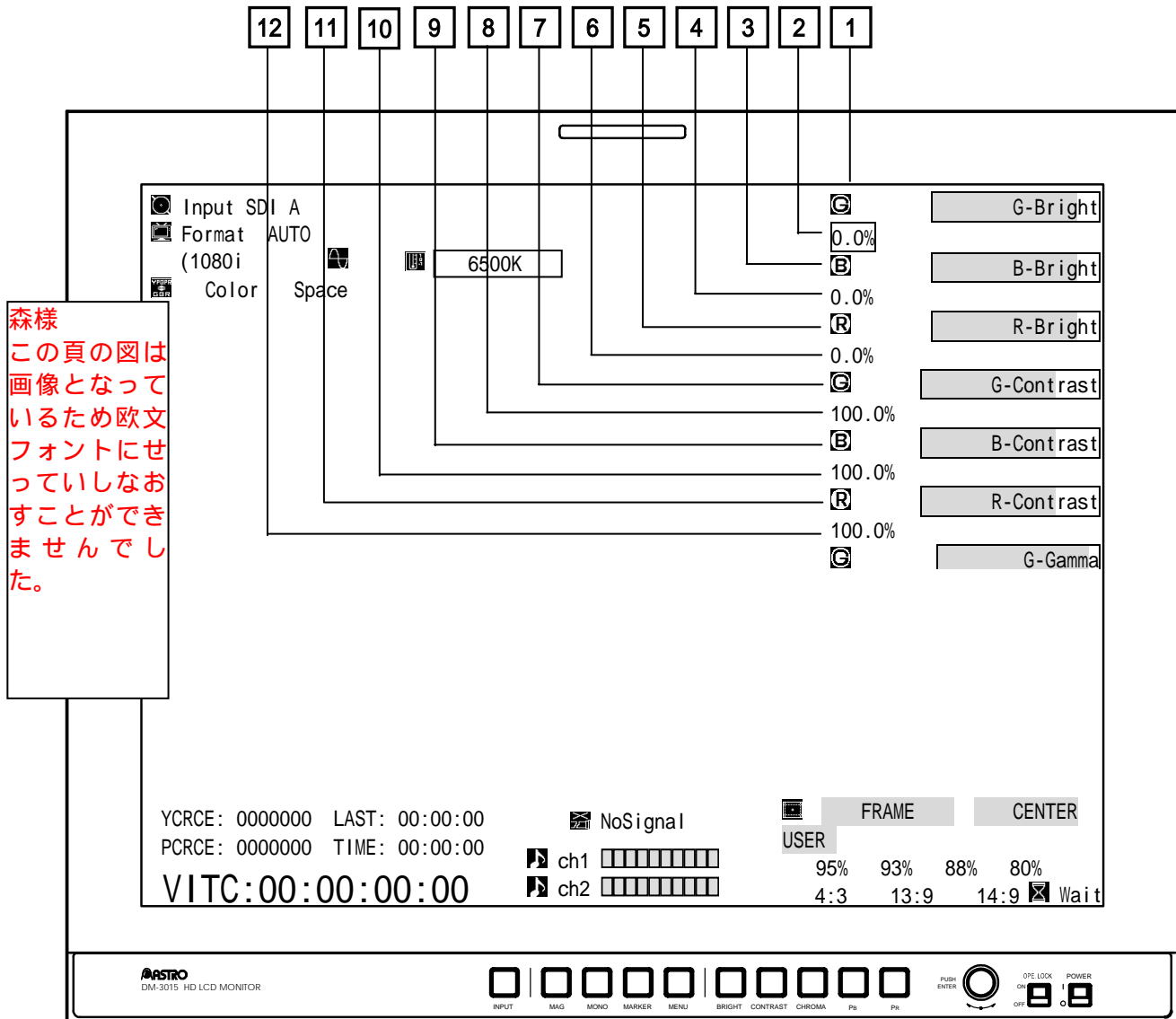
No.	Name	Function
1	G G-Bright	Displays the G brightness setting. (See Section 4-4.)
2	B B-Bright	Displays the B brightness setting. (See Section 4-4.)
3	R R-Bright	Displays the R brightness setting. (See Section 4-4.)
4	G G-Contrast	Displays the G contrast setting. (See Section 4-4.)
5	B B-Contrast	Displays the B contrast setting. (See Section 4-4.)
6	R R-Contrast	Displays the R contrast setting. (See Section 4-4.)
7	G G-Gamma	Displays the G gamma setting.
8	B B-Gamma	Displays the B gamma setting.
9	R R-Gamma	Displays the R gamma setting.
10	Information	Displays the color of the characters.
11	Marker	Displays the color of the markers.
12	TimeCode	Displays the color of the time code

3.3.4　User marker setting screen

The user marker setting screen appears when the MARKER switch is held down.
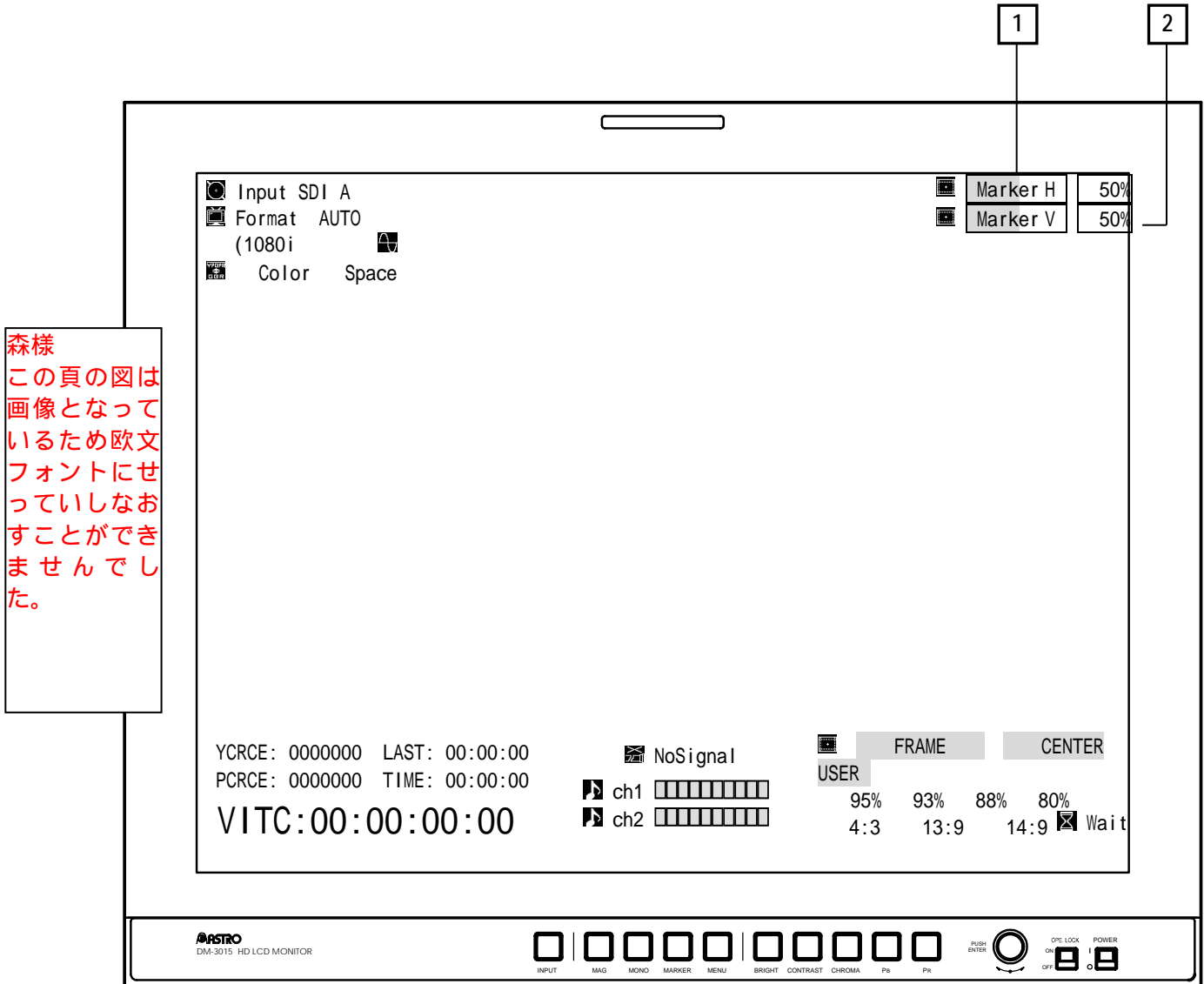
No.	Name	Function
1	▦ Marker H	Displays the horizontal setting of the user markers.
2	▦ Marker V	Displays the vertical setting of the user markers.

3.4   Description of User Actions

Remote control possible
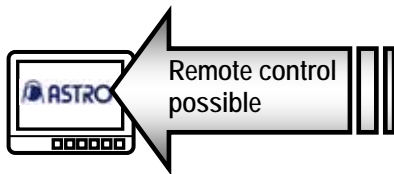
Items with this marker can be controlled using the remote controller. See Section 4.7 for information on these actions.

Switching the input signal

Remote control possible
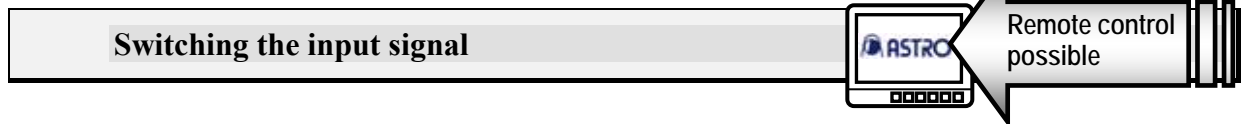
1. Press the *INPUT switch.*
   Analog input: Toggles between SDI A and SDI B.
   To switch to analog input, hold down the *INPUT switch* for one second or longer.

Switching the format
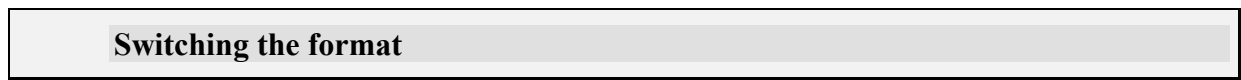
1. Press the *MENU* switch.
2. Turn the *Adjustment dial* and select ⊞ Format . On Select? press the *Adjustment dial* to switch to format selection.
3. Turn the *Adjustment dial* to select a format, then press the *Adjustment dial* to set it.

NOTE	After a format is set, you will automatically exit the selection screen. You can also exit the selection screen by selecting Exit? and then pressing the *Adjustment dial.* <Format types> 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 If AUTO is selected, the format is set automatically according to the type of input signal.

Switching to 4:3 display

Remote control possible
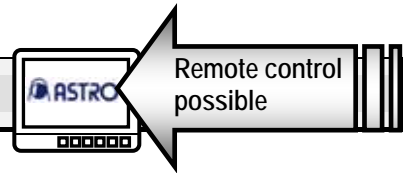
1. Press the *MAG switch*.

NOTE

The settings of the *INPUT switch* and *MONO switch* take effect in the 4:3 display mode as well.

Press the *MAG switch* again and then press a switch other than the *INPUT switch* or *MONO switch* to return to normal video display mode. (See Section 4.5)

CAUTION

Interpolation is not performed in 4:3 display mode, so the screen resolution appears lower. During SD signal input when SD Under Scan is OFF, the screen size will not change even if 4:3 display is selected.

Switches to monochrome/blue only/color display

Remote control possible
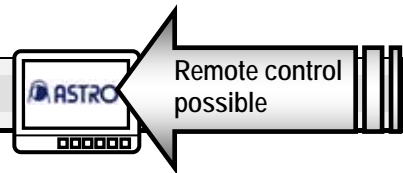
1. Press the *MONO switch.*
   The display mode changes step by step through the following cycle each time the switch is pressed: monochrome → blue only → color.

CAUTION

Color is essentially a state in which Green, Blue and Red are all on. However, if Green, Blue, and Red are turned off on the MENU screen, the setting is color.

When GBR has been selected as the [Color Space] setting, the display mode is not switched to monochrome or blue only.

When the display mode is switched to monochrome or blue only, the ON/OFF settings for Green, Blue and Red on the MENU screen do not take effect.

Remote control possible

Displaying and selecting markers
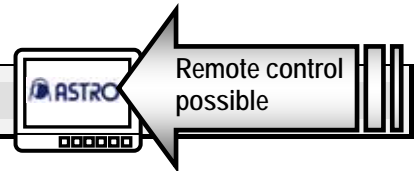
1. Press the *MARKER switch*.
2. Turn the *Adjustment dial* to select a marker, then press the *Adjustment dial* to toggle it ON/OFF.

NOTE

Markers can be repeated.

If [Information] and [ ] (Marker) are not ON, then markers cannot be selected.
If [Information] is OFF or if settings are being entered through the remote controller, then the only available action is toggling markers ON/OFF.

<Marker types>

FRAME, CENTER, USER, 95%, 93%, 88%, 80%, 4:3, 13:9, 14:9, 2.35:1, 1.85:1, 1.66:1

CAUTION

During SD-SDI signal input,   4:3, 13:9, and 14:9 markers are not displayed. FRAME markers are only displayed when [SD Under Scan] is ON..

If [AUTO] is selected for format and there is no input signal, a 1080 marker is displayed.

Setting the user markers

1. Hold down the MARKER switch.
2. Turn the Adjustment dial to select [Marker H] or [Marker V], and then press the Adjustment dial.
3. Turn the Adjustment dial, and set the user markers.

Adjusting the brightness signal offset level

1. Press the *BRIGHT switch*, then turn the *Adjustment dial* to adjust the brightness value (brightness signal offset level). To reset the brightness value to the default, press the *Adjustment dial.*

NOTE

The range is -50.00 to +50.00%. (See Section 4.4)

To exit the brightness adjustment screen, press the *BRIGHT switch* again. If the marker is on when this is done, the marker will be set.

Adjusting the brightness signal

1. Press the *CONTRAST switch* then turn the *Adjustment dial* to adjust the contrast value (brightness signal level). Press the *Adjustment dial* again to reset the contrast value to the default.

NOTE

The range is 0.0 to 200.0% (See Section 4.4)

To exit the contrast adjustment screen, press the CONTRAST switch again. If the marker is on when this is done, the marker will be set.

Adjusting the Pb (Cb) value

1. Press the *PB switch* then turn the *Adjustment dial* to adjust the Pb (Cb) value (color difference signal level). Press the *Adjustment dial* again to reset the Pb (Cb) value to the default.

NOTE

The range is 0.0 to 200.0% (See Section 4.4)

To exit the Pb (Cb) adjustment screen, press the *Pb switch* again. If the marker is on when this is done, the marker will be set.

CAUTION Only works when YPbPr is selected in 　Color Space .

Adjusting the Pr (Cr) value

Press the *PR switch* then turn the *Adjustment dial* to adjust the Pr (Cr) value (color difference signal level). Press the *Adjustment dial* again to reset the Pr (Cr) value to the default.

NOTE	The range is 0.0 to 200.0% (See Section 4.4)
	To exit the Pr (Cb) adjustment screen, press the *Pr switch* again. If the marker is on when this is done, the marker will be set.

CAUTION	Only works when YPbPr is selected in ▦ Color Space .

Adjusting the Pb (Cb) and Pr (Cr) values at the same time

1. Press the *CHROMA switch* then turn the ambient temperature to adjust the chroma value (color difference signal level). Press the *Adjustment dial* again to reset the chroma value to the default.

NOTE	If either Pb (Cb) or Pr (Cr) reaches its maximum or minimum value, it cannot be adjusted further. The range is 0.0 to 200.0%. (See Section 4.4)
	To exit the chroma adjustment screen, press the *CHROMA switch* again. If the marker is on when this is done, the marker will be set.

CAUTION	Only works when YPbPr is selected in ▦ Color Space .

Adjusting the Y gamma value

1. Hold down the *BRIGHT switch* then turn the *Adjustment dial* to adjust the Y gamma level.
   Press the *Adjustment dial* again to reset the Y gamma value to the default.

NOTE

The range is 1.100 to 4.400 (See Section 4.4)

To exit the Y gamma adjustment screen, hold the *BRIGHT switch* down again. If the marker is on when this is done, the marker will be set.

CAUTION Only works when YPbPr is selected in [Color Space].

Adjusting the peaking value

1. Hold down the *CONTRAST switch* then turn the *Adjustment dial* to adjust the peaking value.
   Press the *Adjustment dial* again to reset the peaking value to the default.

NOTE

The range is OFF, ON (1 to 100).

When peaking is turned ON, the filter is turned OFF.

To exit the peaking adjustment screen, hold the *CONTRAST switch* down again. If the marker is on when this is done, the marker will be set.

Once peaking is turned ON and the filter is turned OFF, the filter will remain OFF even after the peaking adjustment screen is exited.

CAUTION When GBR is selected in [Color Space] G signal peaking is set.

Switching the filter ON/OFF

1. Press the *MENU switch*.
2. Turn the *Adjustment dial* and select 【 Filter 】, then press the *Adjustment dial* to toggle ON/OFF.

| NOTE | Once the filter is turned ON, peaking is turned OFF. |

| CAUTION | Turning the filter ON has no effect on 525i/60 and 625i/50 formats. When the filter is turned off during HD signal input, video is output with simple sampling. |

Showing/hiding video when the menu screen is displayed

1. Press the *MENU switch*.
2. Turn the *Adjustment dial* and select 【 Overlay 】, then press the *Adjustment dial* to toggle ON/OFF.

Turning on the tally lights

Remote control possible
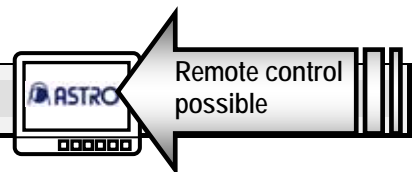
The tally lights (green and red) can be turned ON/OFF through the remote controller only. (See Section 4.7)

| CAUTION | If tally light switching is assigned as a remote controller item, it will always be available when the panel is locked. When the panel is unlocked, the lights will always be off. |
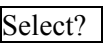
Switching icon animation ON/OFF

1. Press the *MENU switch*.
2. Turn the Adjustment dial and select ▤ Animation , then press the Adjustment dial to toggle ON/OFF.

NOTE
> Icon animation refers to the movement of the hand icon which is used to indicate an adjustment or set value.

Switching audio channels

1. Press the *MENU switch*.
2. Turn the Adjustment dial and select ▶ Audio Channel , then press the *Adjustment dial* on Select? to switch to the audio channel selection screen.
3. Press the *Adjustment dial* to select an audio channel, then press the *Adjustment dial* again to set it.

NOTE
> After an audio channel is set, you will automatically exit the selection screen. You can also exit the selection screen by selecting Exit? and then pressing the *Adjustment dial.*
>
> This item cannot be set when an analog signal is selected.

Switching the audio level meter indicator ON/OFF

Remote control possible
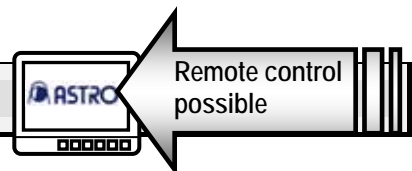
1. Press the *MENU switch*.
2. Turn the Adjustment dial and select ▶ Audio Level Meter , then press the Adjustment dial to toggle ON/OFF.

NOTE
> Audio data are indicated as being based on the BTA S-006B or SMPTE272M-A. See Section 4.6 for information on the audio levels in the audio level meter.
>
> This item cannot be set when an analog signal is selected.

Switching the time code indicator ON/OFF
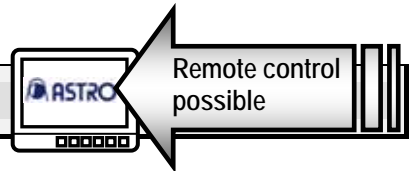
Remote control possible

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select ⏰ Time Code , then press the *Adjustment dial* to toggle ON/OFF.

NOTE

The time code is indicated as VITC conforming to ARIB STD-B4 version 2.0. Time code display is supported for HD format only. This feature cannot be set when an analog signal is selected.

Switching information ON/OFF

Remote control possible

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select 🔢 Information , then press the *Adjustment dial* to toggle ON/OFF.

NOTE

Information" is a text display. Note that time codes, audio level meters, and markers are considered as separate categories because they can be shown/hidden independently. Also, ⊠ NoSignal is displayed regardless of whether Information is set to ON or OFF. Note that a number of items cannot be adjusted when Information is set to OFF.

Marker mask settings

Remote control possible
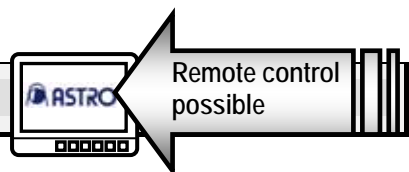
1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select ▛ Half Mask or ⊠ Mask , then press the *Adjustment dial* to toggle ON/OFF.

NOTE

When half mask or mask is selected, the display area is set on the narrowest marker. If half mask and mask are both set to ON, the mask setting takes priority. Half mask and mask areas are set using markers. When half mask or mask is set to ON, masking is applied regardless of whether markers are set to ON or OFF.

CAUTION

When the 525i/60 or 625i/50 format is selected, 4:3, 13:9, and 14:9 masks are not displayed. If AUTO is selected for format and there is no input signal, then a 1080 marker is masked.

Switching the color space

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select ▦ Color Space then press the *Adjustment dial* to toggle YPbPr/GBR.

CAUTION
> When the color space is switched, the monochrome or blue only display mode is released, and Green, Blue and Red are all set to ON.
>
> When GBR has been selected as the ▦ Color Space setting, some of the items cannot be adjusted.

Switching Green ON/OFF

Remote control possible
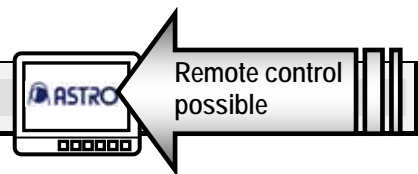
1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select **G** Green , then press the *Adjustment dial* to toggle ON/OFF.

CAUTION
> It is not possible to turn the Green, Blue, and Red colors all OFF at the same time. The ON/OFF settings do not apply when monochrome or blue only is selected.

Switching Blue ON/OFF

Remote control possible
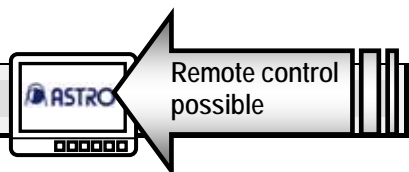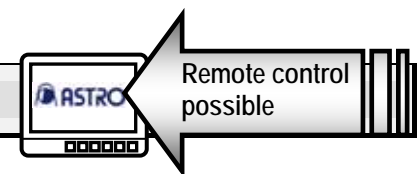
1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select **B** Blue , then press the *Adjustment dial* to toggle ON/OFF.

CAUTION
> It is not possible to turn the Green, Blue, and Red colors all OFF at the same time. The ON/OFF settings do not apply when monochrome or blue only is selected.

Switching Red ON/OFF

Remote control possible

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select $\boxed{\overline{\text{R}} \; \text{Red}}$, then press the *Adjustment dial* to toggle ON/OFF.

CAUTION　It is not possible to turn the Green, Blue, and Red colors all OFF at the same time. The ON/OFF settings do not apply when monochrome or blue only is selected.

Switching the color temperature

Remote control possible

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select $\boxed{\text{Color Temperature}}$　then press the *Adjustment dial* to toggle 6500K/9300K.

NOTE　Separate settings for the G brightness, B brightness, R brightness, G contrast, B contrast, R contrast, G gamma, B gamma and R gamma parameters are held for each color temperature. (See Section 3.3.3.)

Switching the H Delay ON/OFF

Remote control possible

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select $\boxed{\text{H Delay}}$, then press the *Adjustment dial* to toggle ON/OFF.

Switching the V Delay ON/OFF

Remote control possible

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select $\boxed{\text{V Delay}}$, then press the *Adjustment dial* to toggle ON/OFF.

Assigning items to remote controllers

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select 📠 Remote Control 1 , then move to Select? and press the *Adjustment dial* to switch to the remote controller selection screen.
3. Turn the *Adjustment dial* to select an item to assign to this remote controller, then press the *Adjustment dial* to set it.

NOTE

Use the same procedure to set items for 📠 Remote Control 2 to 📠 Remote Control 6 . After entering the remote controller settings, the selection screen is exited you will automatically exit the selection screen.

If the remote controller is not going to be used, select *** Non *** as the 📠 Remote Control 1 to Remote Control 6 setting.

See Section 4.7 for details on remote controllers. Remote controller settings entered here only apply when the panel is locked.

CAUTION

After an item has been assigned to one remote controller, if the same item is selected for a different remote controller, the assignment will be applied on this second remote controller. The assignment status of the first remote controller will change to *** Non *** , meaning that no item is currently assigned to it.

Enabling the remote controller

CAUTION

Since the remote controller is enabled by setting the *LOCK switch* to ON, settings of some of the items will change.   (See Section 4.7.)

Loading settings

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select ⚡ Load User Data then move to   Select?   and press the *Adjustment dial* to switch to the user data loading screen.
3. Turn the *Adjustment dial* to select the user number to be loaded, then press the *Adjustment dial* to set it.

NOTE After user data have been set for loading, you will automatically exit the selection screen. You can also exit the selection screen by selecting   Exit?   and then pressing the *Adjustment dial.*

Saving settings

• Saving the settings which are always displayed at startup when the power is turned on
1. Set the *LOCK Switch* to the ON position.

NOTE This disables all key actions and saves the values for the items in Section 4.8. The values saved at this time are loaded and set when the power is turned on. While the panel is locked, only the remote controllers, although their values are not saved.

CAUTION Do not turn off the power or unlock the *LOCK Switch* while   ⧗ Wait   is displayed. If the power is turned off or the *LOCK Switch* is unlocked during the saving process, the default values may be set instead of the saved values the next time the power is turned on.

• Saving set values as fixed user data
1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select 🗂 Save User Data then move to   Select?   and press the *Adjustment dial* to switch to the user data selection screen.
3. Turn the *Adjustment dial* to select the user number to be saved, then press the *Adjustment dial* to set it.
4. Turn the *Adjustment dial* again to select OK / Cancel , then press the *Adjustment dial* to set it.

NOTE

This saves the values for the items in Section 4.8. After user data have been set for saving, you will automatically exit the selection screen. You can also exit the selection screen by selecting Exit?   and then pressing the *Adjustment dial.*

CAUTION

Do not turn off the power while   ⊠   is being displayed. If the power is turned off during the saving process, the default values may be set instead of the saved values for all users.

Switching SD Under Scan ON/OFF

Remote control possible

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select   ▦ SD Under Scan , then press the Adjustment dial to toggle ON/OFF.

NOTE

These settings are valid only when SD-SDI signals are input.

When SD Under Scan is OFF, the video display area is 1024×768 (pixels). When SD Under Scan is ON, the video display area is 720×487 (pixels) for 525i/60 format, and 720×574 (pixels) for 625i/50 format.

Resetting the error count

1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select   🔧 Error Reset , then press the *Adjustment dial*.

NOTE

This resets the CRC error count and the elapsed time.

Resetting default values

- Resetting the default for the setting on the currently selected channel (see Section 4.8)
1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select ▨ Channel Reset , then press the *Adjustment dial.*

- Resetting the settings on all channels (see Section 4.8)
1. Press the *MENU switch.*
2. Turn the *Adjustment dial* to select ▨ Factory Default , then press the *Adjustment dial.*

NOTE	This resets the CRC error count and the elapsed time as well.

CAUTION	The settings which have been stored as fixed user data will not be reset.

Adjusting the LCD

The following settings are displayed when the *MONO switch* is held down. (See Section 3.3.3) Separate settings for the G brightness, B brightness, R brightness, G contrast, B contrast, R contrast, G gamma, B gamma and R gamma parameters are held for each color temperature (6500K/9300K).

Adjusting the G brightness

1. Hold down the *MONO switch.*
2. Turn the *Adjustment dial* to select Ⓖ G-Bright , then press the *Adjustment dial.*
3. Turn the Adjustment dial to adjust the G brightness value.

NOTE	The range is -50.00 to 50.00%. (See Section 4.4). Separate settings for this parameter are held for each color temperature.

Adjusting the B brightness

1. Hold down the *MONO switch.*
2. Turn the *Adjustment dial* to select **B** B-Bright , then press the *Adjustment dial*.
3. Turn the Adjustment dial to adjust the B brightness value.

NOTE
> The range is -50.00 to   50.00%. (See Section 4.4).
> Separate settings for this parameter are held for each color temperature.

Adjusting the R brightness

1. Hold down the *MONO switch.*
2. Turn the *Adjustment dial* to select **R** R-Bright , then press the *Adjustment dial*.
3. Turn the Adjustment dial to adjust the R brightness value.

NOTE
> The range is -50.00 to +50.00%. (See Section 4.4).
> Separate settings for this parameter are held for each color temperature.

Adjusting the G contrast

1. Hold down the *MONO switch.*
2. Turn the *Adjustment dial* to select ▨ G-Gamma , then press the *Adjustment dial*.
3. Turn the Adjustment dial to adjust the G contrast value.

NOTE
> The adjustment range is 0.0 to 200.0%.   (See Section 4.4.)
> Separate settings for this parameter are held for each color temperature.

Adjusting the B contrast

1. Hold down the *MONO switch.*
2. Turn the *Adjustment dial* to select **B** B-Contrast , then press the *Adjustment dial*.
3. Turn the Adjustment dial to adjust the B contrast value.

NOTE
> The adjustment range is 0.0 to 200.0%.   (See Section 4.4.)
> Separate settings for this parameter are held for each color temperature.

Adjusting the R contrast

1. Hold down the *MONO switch*.
2. Turn the *Adjustment dial* to select Ⓡ R-Contrast, and press the Adjustment dial.
3. Turn the *Adjustment dial* to adjust the R contrast value.

NOTE

The adjustment range is 0.0 to 200.0%.   (See Section 4.4.)

Separate settings for this parameter are held for each color temperature.

Adjusting the G gamma

1. Hold down the *MONO switch.*
2. Turn the *Adjustment dial* to select Ⓖ G-Gamma , then press the *Adjustment dial*.
3. Turn the *Adjustment dial* to adjust the G-Gamma value.

NOTE

The range is 1.100 to 4.400. Separate settings for this parameter are held for each color temperature.

Adjusting the B gamma

1. Hold down the *MONO switch*.
2. Turn the *Adjustment dial* to select Ⓑ B-Gamma, and press the Adjustment dial.
3. Turn the *Adjustment dial* to adjust the B gamma value.

NOTE

The adjustment range is 1.100 to 4.400.

Separate settings for this parameter are held for each color temperature.

Adjusting the R gamma

1. Hold down the *MONO switch*.
2. Turn the *Adjustment dial* to select Ⓡ R-Gamma, and press the Adjustment dial.
3. Turn the *Adjustment dial* to adjust the R gamma value.

NOTE

The adjustment range is 1.100 to 4.400.
Separate settings for this parameter are held for each color temperature.

Changing the font color

1. Hold down the *MONO switch.*
2. Turn the *Adjustment dial* to select ▦ Information , then press the *Adjustment dial.*
3. Turn the *Adjustment dial* to set the font color (63 colors).

Changing the marker color

1. Hold down the *MONO switch.*
2. Turn the *Adjustment dial* to select ▦ Marker , then press the *Adjustment dial.*
3. Turn the *Adjustment dial* to set the marker color (64 colors).

Changing the time code color

1. Hold down the *MONO switch.*
2. Turn the *Adjustment dial* to select ⊙ TimeCode , then press the *Adjustment dial.*
3. Turn the *Adjustment dial* to set the time code color (63 colors).

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 Complies with BTA S-001B/2B/4B
  2 Complies with SMPTE 274M
  3 Complies with SMPTE 296M
  4 Complies with SMPTE 259M

4.2　Input Signal Specifications

SDI input specifications	Specifications	
SDI input	HDTV	Complies with BTA S-004B and SMPTE 292M; NRZI SDI signal
	SDTV	Complies with SMPTE 259M; NRZI SDI signal
	Automatic tracking of field (frame) frequency, 60/59.94[Hz], etc. Input format automatic tracking capability	

Analog input specifications	Specifications
HDTV YPbPr (or GBR) input	Complies with BTA S-001B, SMPTE 274M, and SMPTE 296M
	Automatic tracking of field (frame) frequency, 60/59.94[Hz], etc. Input format automatic tracking capability
	Analog signal reception precision: ±10% Input termination: 75 ohms (can be switched ON/OFF) Synchronization: Y OnSync (or G OnSync)

4.3　Display Specifications

Display	Specifications		
Liquid crystal	a-Si TFT liquid crystal		
Display colors	16, 194, 277 colors		
Contrast ratio	400:1 (typical)		
Response time	25 ms (typical)		
Viewing angle	Vertical: 170° Horizontal: 170°		
Brightness	250 cd/m^2 (max)		
Screen size	15 inches		
Resolution	1024 (H) × 768 (V) pixels		
Video display area	HDTV	960 (H) × 540 (V) pixels	
	SDTV	SD Under Scan OFF	1024 (H) × 768 (V) pixels (*)
		SD Under Scan ON	720 (H) × 487 (V) pixels (525i/60) 720 (H) × 574 (V) pixels (625i/50)
Pixel pitch	0.297 (W) × 0.297 (H) mm		

*　When 525i/60 is selected, the 720 × 480 (pixels) display area is enlarged to 1024 × 768, so the seven lines on the top and bottom are not displayed.

4.4   Adjustment Values

● Brightness: The brightness signal offset level range is -50.00 to +50.00%.
The same applies for the G brightness, B brightness and R brightness.

Display level

109
100

0

-7   0   100 109

Input level

- - - - - +50

———— 0

············· -50
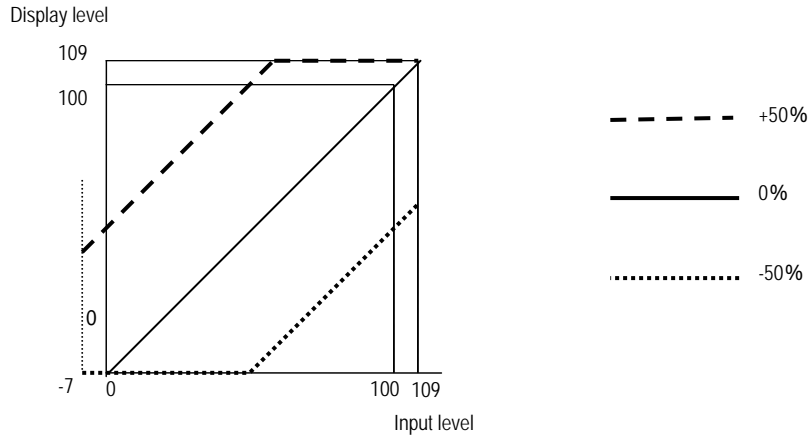
● Contrast: The contrast signal level range is 0.0 to 200.0%.
The same applies for the G contrast, B contrast and R contrast.

Display level

109
100

0

-7   0   100 109

Input level

- - - - - 200

———— 100

············· 50

- - - 0

42
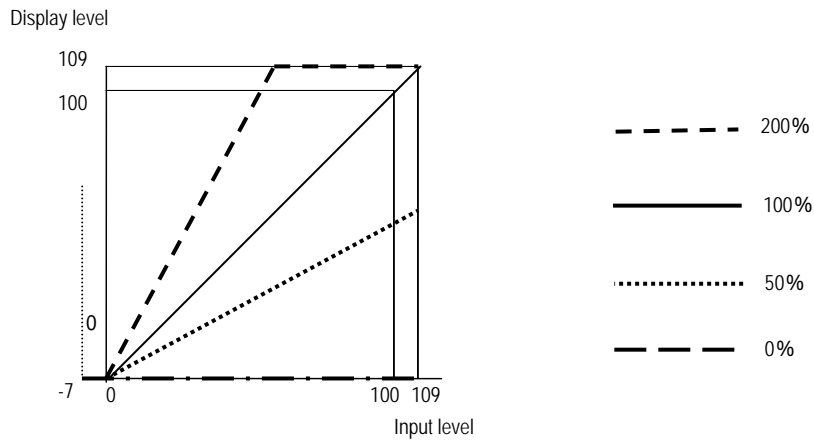
● Chroma, Pb (Cb), Pr (Cr)　The color difference signal level range is 0.0 to 200.0%.
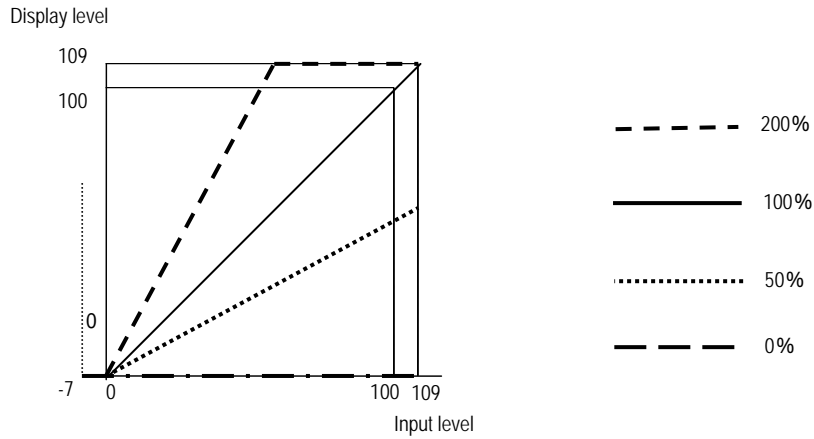
Definitions for input levels in Section 4

Input level		0	100
SDI	Y/G/B/R	Digital value: 64	Digital value: 940
	Pb/Pr	Digital value: 64	Digital value: 960

Definition for display level in Section 4

Display level	0	100
	Minimum value	State corresponding to "100" input level in initial state

4.5　Zoom Function

● 1920×1080

A 1440x1080 image around the center of the display is cropped from the video display area and displayed as a 1024x768 image.

The same processing is undertaken for 1920x1035 images as for 1920x1080 images.
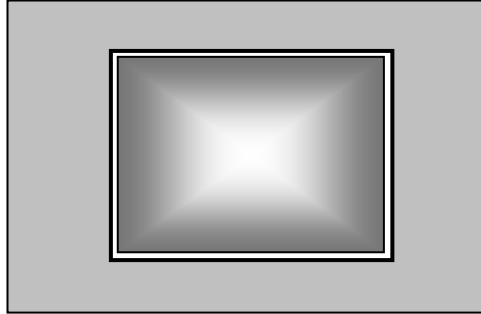
● 1280×720

A 960×720 image near the center of the video display area is cropped and displayed.
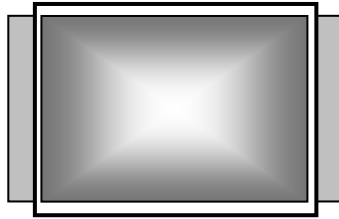
● 720×487 and 720×576

The video display area is enlarged when 625i/50 format is selected. A 720×480 (pixels) area is enlarged to 1024×768 when 525i/60 format is selected.

Enlarged
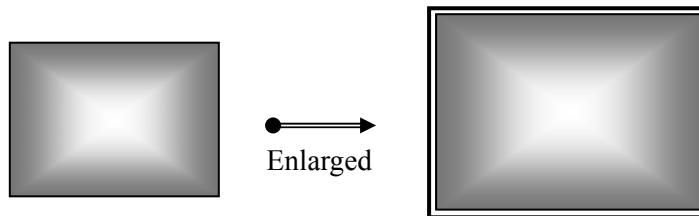
Note: Key to display diagrams

Denotes video image

Denotes LCD screen

Denotes 4:3-displayed video image

4.6   Audio Level Meter

The level reading on the audio level meter is indicated as shown below.
Audio standards: Complies with BTA S-006B and SMPTE272M-A standards

	Less than -45	Less than -40	Less than -35	Less than -30	Less than -25	Less than -20	Less than -15	Less than -10	Less than -5	Less than 0 (in dB)
♪ch**										
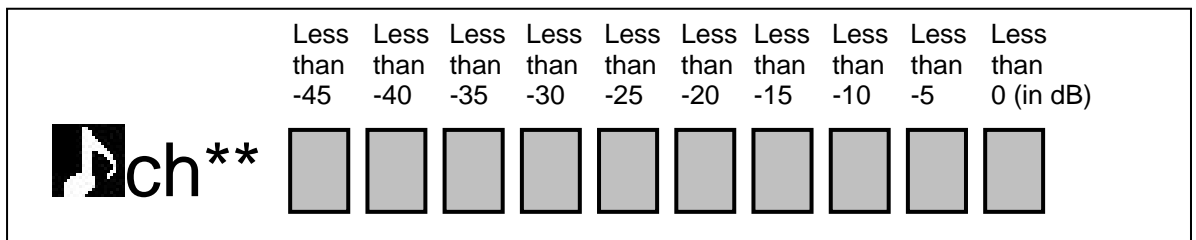
NOTE	If the input audio is less than -45 dB, it is indicated by the far left cell. This makes it possible to determine whether there is any audio input.

4.7 Remote Controllers

Remote controller settings can be set by the user through the MENU screen. The abbreviations appearing on the menu screen are described below. Remote controllers are only active when the panel is locked.

Display	Function	See	Short	Open	Recommended switch
Input A/B (*1)	Toggles between SDI A and SDI B input signals	P24	SDI A / SDI B	-	Push
Input SDI/Ana (*1)	Toggles between SDI and Analog input signals.	P24	SDI / Analog	-	Push
Marker ON/OFF	Toggles marker ON/OFF	P26	ON	OFF	Slide
H Mask ON/OFF	Toggles half mask outside marker area ON/OFF	P34	ON	OFF	Slide
Mask ON/OFF	Toggles mask outside marker area ON/OFF	P34	ON	OFF	Slide
TALLY (G) ON/OFF	Toggles Tally (Green) ON/OFF	P31	ON	OFF	Slide
TALLY (R) ON/OFF	Toggles Tally (Red) ON/OFF	P31	ON	OFF	Slide
MAG ON/OFF (*1)	Toggles 4:3 display ON/OFF	P25	ON / OFF	-	Push
MONO ON/OFF (*1)	Toggles between monochrome and color (*2)	P25	Monochrome / Color	-	Push
B Only ON/OFF (*1)	Toggles between blue only and color (*2)	P25	Blue only / Color	-	Push
Audio ON/OFF	Toggles audio level meter display ON/OFF	P32	Hide	Show	Slide
Time C ON/OFF	Toggles time code display ON/OFF	P33	Hide	Show	Slide
Info ON/OFF	Toggles information display ON/OFF	P33	Hide	Show	Slide
Green ON/OFF	Toggles Green ON/OFF	P35	OFF	ON	Slide
Blue ON/OFF	Toggles Blue ON/OFF	P35	OFF	ON	Slide
Red ON/OFF	Toggles Red ON/OFF	P35	OFF	ON	Slide
D65/D93	Toggles between 6500K and 9300K liquid crystal color temperatures	P36	9300K	6500K	Slide
H Delay ON/OFF	Toggles H Delay ON/OFF	P36	ON	OFF	Slide
V Delay ON/OFF	Toggles V Delay ON/OFF	P36	ON	OFF	Slide
SD Under ON/OFF	Toggles Under Scan ON/OFF when SD format is selected	P40	ON	OFF	Slide
*** Non ***	Indicates that nothing has been assigned	-	-	-	-

*1   For all items not accompanied by (*1), the item is set by reading the status of the remote controller when the *LOCK switch* has been set to ON.

*2   Color is essentially a state in which Green, Blue and Red are all on. However, if Green, Blue, and Red are turned off on the MENU screen, the setting is color.

4.8 Default Settings

The DM-3015 factory defaults and the values which are set during reset are presented below.

Common Parameters

The following settings apply to SDI A, SDI B, and analog channels. These settings are not reset unless the settings on all channels are reset by selecting "Factory Default".

Setting	Setting/adjustment range	Default
Input	SDI A, SDI B, Analog	SDI A
4:3 display (MAG)	ON/OFF	OFF
Marker	ON/OFF (marker types: FRAME, CENTER, USER, 95%, 93%, 88%, 80%, 4:3, 13:9, 14:9, 2.35:1, 1.85:1, 1.66:1)	OFF (marker types: FRAME, CENTER)
User Marker H/V	0 to 99%	50%
G-Bright	-50.0 to +50.0%	0.0%
B-Bright	-50.0 to +50.0%	0.0%
R-Bright	-50.0 to +50.0%	0.0%
G-Contrast	0.0 to 200.0%	100.0%
B-Contrast	0.0 to 200.0%	100.0%
R-Contrast	0.0 to 200.0%	100.0%
G-Gamma	1.100 to 4.400	2.200
B-Gamma	1.100 to 4.400	2.200
R-Gamma	1.100 to 4.400	2.200
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
Half Mask	ON/OFF	OFF
Mask	ON/OFF	OFF
Color Temperature	6500K/9300K	6500K
SD Under Scan	ON/OFF	OFF
Remote Control 1	See Section 4.7	Input A/B
Remote Control 2	See Section 4.7	Marker ON/OFF
Remote Control 3	See Section 4.7	H Mask ON/OFF
Remote Control 4	See Section 4.7	Mask ON/OFF
Remote Control 5	See Section 4.7	TALLY (G) ON/OFF
Remote Control 6	See Section 4.7	TALLY (R) ON/OFF

Channel-Specific Settings

The following settings apply specifically to the SDI A, SDI B, or analog channel. These settings may be reset by using selecting either "Channel Reset" or "Factory Default".

Setting	Setting/adjustment range	Default
Mono	ON/OFF	OFF
Blue Only	ON/OFF	OFF
Bright	-50.0 to +50.0%	0.0%
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	1.100 to 4.400	2.200
Peaking	OFF, 1 to 100	OFF
Format	SDI: 15 formats in total Analog: 13 formats in total	Auto
Filter	ON/OFF	ON
Color Space	YPbPr/GBR	YPbPr
Green	ON/OFF	ON
Blue	ON/OFF	ON
Red	ON/OFF	ON
H Delay	ON/OFF	OFF
V Delay	ON/OFF	OFF
Information Color	G: 0 to 3 B: 0 to 3 R: 0 to 3 63 colors in total (no black)	White3 (G: 3, B: 3, R: 3)
Marker Color	G: 0 to 3 B: 0 to 3 R: 0 to 3 64 colors in total	White3 (G: 3, B: 3, R: 3)
Time Code Color	G: 0 to 3 B: 0 to 3 R: 0 to 3 63 colors in total (no black)	White3 (G: 3, B: 3, R: 3)

4.9   General Specifications
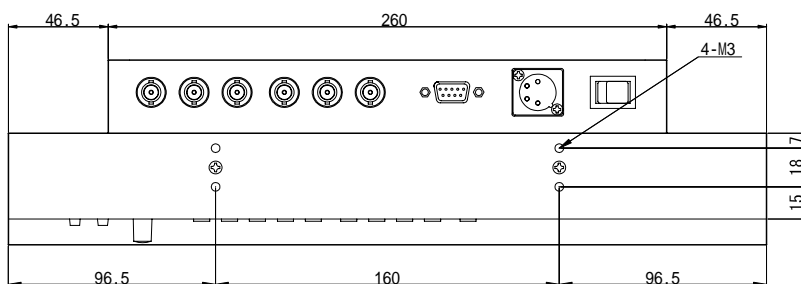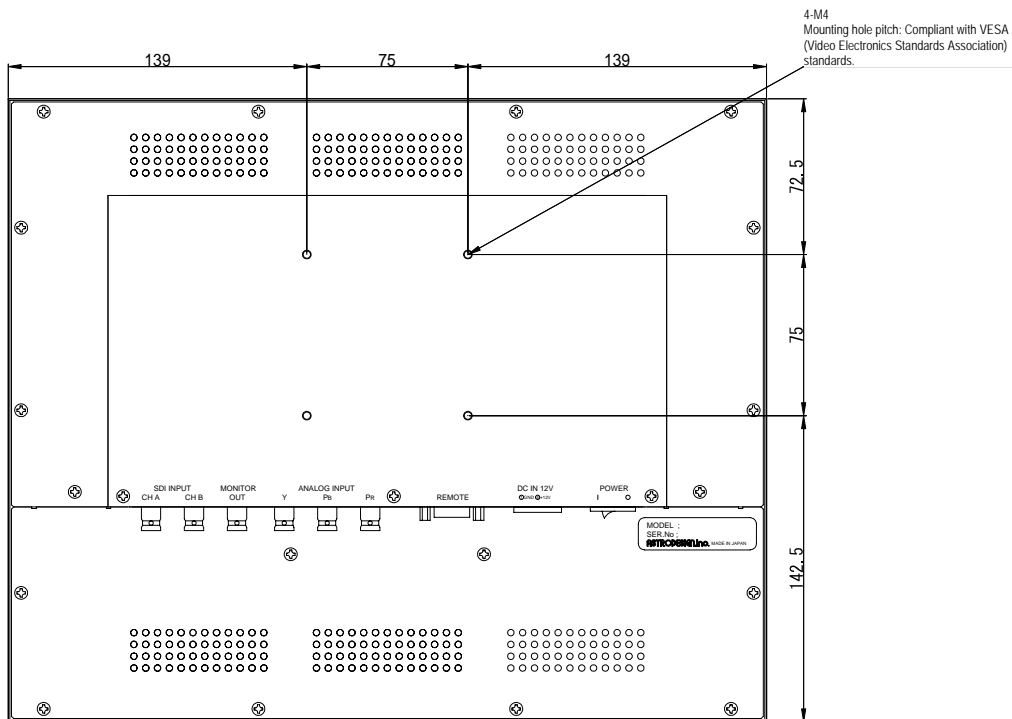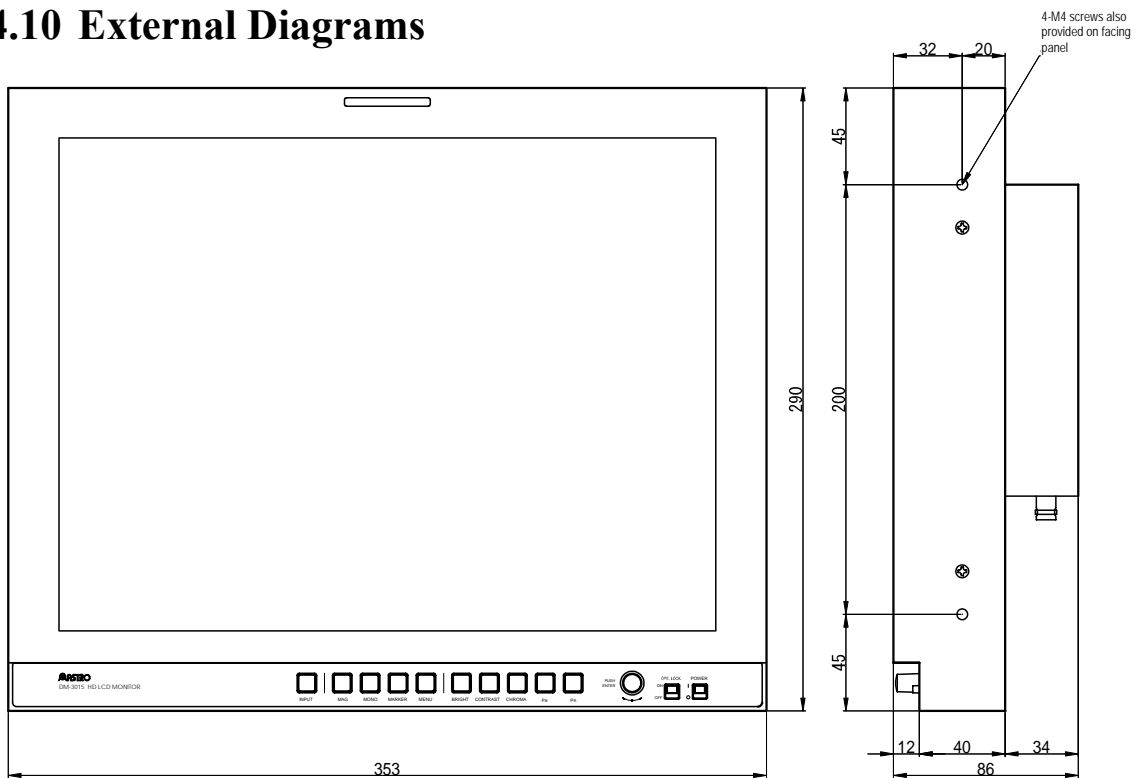
DM-3015 (Main Unit) Operating Environment and Ratings

Operating temperature range	0 to 40°C
Storage temperature range	-10 to 60°C
Operating humidity range	30 to 80%RH (ambient temperature of 0 to 40°C, no condensation)
Storage humidity range	10 to 90%RH (ambient temperature of 0 to 40°C, no condensation)
Rated voltage	10-18 VDC±5%
Consumed power (main unit)	36 W (typical) (main unit only)
Liquid crystal brightness life	50,000 hours (time for liquid crystal backlight to decline 50%) (*)
External dimensions	353 (W) × 290 (H) × 86 (D) mm
Weight	Approximately 4.7 Kg

* Liquid crystal brightness life is an estimated value and is not guaranteed.

Included AC/DC Adapter Operating Environment and Ratings

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

4.10 External Diagrams

4-M4 screws also provided on facing panel

4-M4
Mounting hole pitch: Compliant with VESA (Video Electronics Standards Association) standards.

SDI INPUT
CH A   CH B

MONITOR
OUT

ANALOG INPUT
Y   Pb   Pr

REMOTE

DC IN 12V

POWER
I   O

MODEL ;
SER.No ;

4-M3

CHAPTER 5: INCLUDED ACCESSORIES AND OPTIONS

5.1 Included Accessories

DM-3015 Instruction Manual	1
AC/DC adapter	1
M3 x L6 screws	4 pcs
Free-standing plate	1

5.2 Options

A rack-mounting bracket and other optional accessories are available for use with the liquid crystal unit (main unit). New options are released on an ongoing basis. Contact our Sales Department for the latest information on options.

Product name	Model number
Single rack-mounting bracket	DM-3015 - 04
Step handle	DM-3015 - 15

The included AC/DC adapter and the optional AC/DC adapter are identical.

CHAPTER 6: MAINTENANCE AND TROUBLESHOOTING

■   When the monitor does not operate properly

Symptom	What to check
The images are not displayed properly.	● Has the format been set properly?
	● Has the correct setting been selected for 🔲 Color Space (YPbPr/GBR)?
	● Has the input channel been set properly?
The front switches do not work.	● Is the LOCK switch at the ON position? (It should be at OFF.)
The remote controller does not work.	● Is the LOCK switch at the OFF position? (It should be at ON.)
The marker and other settings changed when the LOCK switch is set to the ON position.	● Check the remote controller 1 to 6 settings. (See Section 4.7.)
Something is wrong with the image quality.	● Hold down the MONO switch to establish the LCD screen adjustment status, and check for errors in the settings.

■   The following phenomena are not indicative of malfunctioning or trouble.

The following kinds of conditions occur due to the nature of liquid crystal.
● The response time, brightness and/or colors of the liquid crystal may change depending on the ambient temperature.
● Unevenness in the brightness, flicker, vertical stripes or indistinct spots may appear depending on what is displayed.
● The display's optical characteristics (brightness, display unevenness, etc.) are dependent upon the operating time and undergo changes. They are particularly subject to change at low temperatures.
● The display colors may change at certain view angles.
● Noise may be generated on the start screen.
● After-images may occur. Avoid displaying the same patterns on the screen for prolonged periods of time.

■   When an error or trouble has occurred

- In the unlikely event that an error or trouble has occurred, contact your dealer or an Astrodesign sales representative.
- If trouble occurs in the liquid crystal panel, the user will be charged for repairs or replacement regardless of whether the picture monitor is still under warranty.

■   Concerning the handling of this manual

- This manual may not be used or copied in whole or in part without permission.
  1) The contents of this manual and the specifications given herein are subject to change without notice due to improvements in 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.
- An incorrectly collated manual or a manual with missing pages will be replaced.
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Concerning the use of the DM-3015

- The manufacturer will not be liable for any outcome which results from the operation of the product.
- The products and product names mentioned in this manual are the trademarks and registered trademarks of the companies concerned.
- All inquiries concerning this product should be addressed to your dealer or to the manufacturer at the contact numbers given below.