



MODEL

HMM-1850

MULTI FORMAT

LCD COLOR MONITOR

OPERATION MANUAL

Ikegami

SAFETY INSTRUCTION

Class B Equipment (Broadcasting and Telecommunications Equipment for Professional Use)

This equipment is for professional use (Class B) and granted a Certificate of Conformity for electromagnetic radiation. It is designed for professional use and can be used in all regions.

(These images are for illustrative purposes only. They may vary depending on circumstances.)

Please read the Safety Instructions carefully to ensure proper use of the product.



Warning/Caution Label Description



This label indicates potential safety hazards during use.

Failure to do so may result in personal injury or property damage.



Warning/Caution Label Description



This label indicates prohibited actions



This label indicates instructions that must be followed.

Power Supply Instructions



- ▶ If you do not use the monitor for a long time, please set it to DPMS (Display Power Management Signaling) mode.
- ▶ If you turn on a screen saver, set it to Moving Picture mode.
- ▶ Do not use damaged power cords, plugs, or loose outlets. Failure to do so may cause an electric shock or fire.



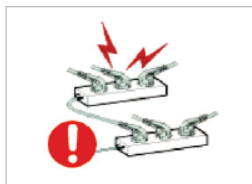
Never remove the plug or power cord from the outlet with wet hands.

- Failure to do so may cause an accident due to an electric shock.



Make sure that the power cord is firmly plugged into the outlet and not loose.

- Unstable connection may cause a monitor blackout or fire.
- To disconnect, grip the plug and pull from the outlet. Pulling the cord may cause Fire.



Do not insert several plugs into an outlet.

- It may cause a fire or accident due to overloading.



Never use a damaged plug or outlet. Such use may result in an accident such as an electric shock or fire.

- Failure to do so may cause a fire or accident due to a short circuit.

SAFETY INSTRUCTION



- Excessive bending of the power plug may cause disconnection or a short circuit.
- Please note that disconnection may cause a fire or accident due to a short circuit.

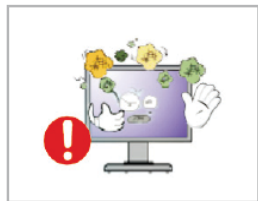


- Do not remove the power cord while using the monitor.
- An electric shock occurring during disconnection may damage the monitor.

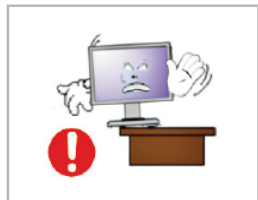
Power Supply Instructions



If the monitor is to be installed and used in a special place rather than under normal conditions, the surroundings may cause serious quality problems. Before installing the product, please check with our Service Engineer.



- Do not install or use the product in humid or dusty locations.
- Failure to do so may cause a fire or accident due to a short circuit or electric shock.



- Make sure that the monitor stand does not stick out from a desk, shelf, or case when installing the product.
- If the product falls to the ground, it may be broken or damaged.



- Maintain a distance of over 10cm from the wall when installing the monitor.
- An increase in the temperature inside the monitor may affect the service life and performance of its components.



- Set down the monitor gently to avoid impacts.
- An impact may cause monitor failure or personal injury.



- Make sure to keep the power cord away from any heat source.
- Melting of the cord coating may cause an electric shock or fire. Please adhere to the warning.
 - Do not place cigarettes, candles, or mosquito repellent incense on top of the product. Failure to keep them away may cause a fire.

SAFETY INSTRUCTION



To mount a wall-mount monitor on the wall, please consult an expert.

- Installation by an unqualified person may cause personal injury. Make sure to use the designated mounting device.

Cleaning and Use Instructions



Do not spray a cleaning solution directly on the monitor.

- Directly spraying on the monitor may significantly increase the risk of discoloration, cracks, or peeling of the LCD panel surface.



Do not use or keep flammable sprays or substances near the product.

- Careless handling of flammable substances may cause an explosion or fire.



Make sure to disconnect the power cord before cleaning.

- Failure to do so may cause an electric shock or fire.



Pull out the power cord and wipe it with soft, dry cloth when cleaning the product.

- Do not use chemicals, including wax, benzene, alcohol, thinner, mosquito repellent, air freshener, lubricant, or cleaning solution.



Do not put items that can easily catch fire, such as metal chopsticks, wire, awls, paper, or matches, into the air vent, headphone port, or AV port.

- Failure to do so may cause an electric shock or fire.
- If water or any foreign object gets into the product, turn off the product, unplug it from the outlet, and contact our Service Center.



If one image is displayed for a long time, it may cause burn-in or image persistence.

- If the monitor is not used for a long time, set it to Power Saving mode or Moving Picture mode such as animated screensavers.



If the monitor makes unusual noises or smoke, unplug the product and contact our Service Center.

- Failure to do so may cause an electric shock or fire.

SAFETY INSTRUCTION



Do not cover the air vents.

- Improper ventilation may cause monitor failure or a fire.



If the product is not used for a long time, disconnect the power cord.

- Dust buildup may result in an electric shock or short circuit or fire due to heat output, ignition or deteriorating insulation.



Do not place the monitor on unstable or vibrating locations, such as shaking shelves or inclined surfaces.

- The fall of the product may result in failure or personal injury. Using the monitor on a vibrating location may shorten its service life or cause a fire.



When moving the monitor, make sure to turn it off and unplug from the outlet. Also, make sure that other cords such as connecting cables have been disconnected.

- Moving the monitor without disconnecting the cord will damage the cord, which may cause a fire or electric shock.



Make sure that no child hangs on to or climbs on the product.

- If the product collapses, it may cause injury or death.



Set the product resolution and frequency correctly. Otherwise, it may lead to eye problems.

- The resolution varies depending on the monitor size. Find and set the correct resolution before use.

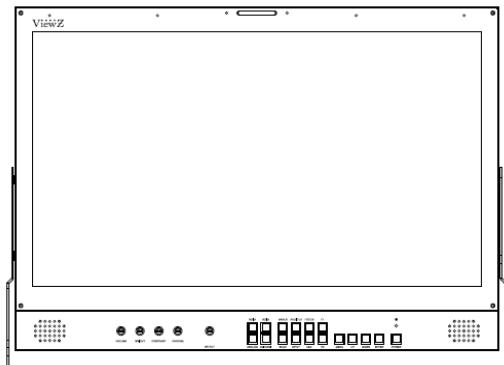
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This Monitor was
Manufactured by ISO 9001
Certified Factory

CHECKING CONTROL BUTTONS / NAMES & FUNCTIONS OF I/O PORTS

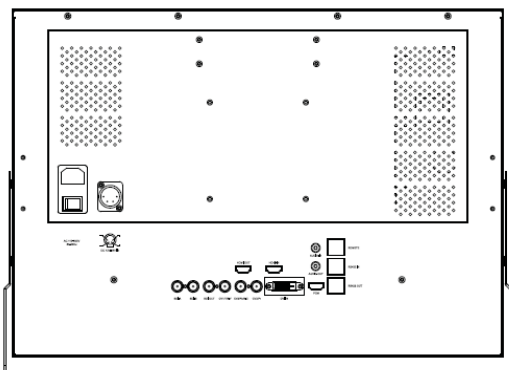
1. Checking Control Buttons



↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
1 2 3 4 5 6 7 8 9 10

- | | |
|--------------------|---------------------------------|
| 1. Volume | 6. Cut Keys & Programmable Keys |
| 2. Bright | 7. Menu |
| 3. Contrast | 8. Up / Down |
| 4. Chroma | 9. Enter |
| 5. Main Select Jog | 10. Power |

2. Names and Functions of I/O Ports



↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
1 2 3 4 5 6 7 8 9 10

- | | |
|--------------------------|------------------|
| 1. AC 110~240V | 6. DVI In |
| 2. DC 12~24V In | 7. Audio In/ Out |
| 3. SDI A/ SDI B/ SDI Out | 8. PGM |
| 4. CV123/ YPbPr/ SYSC | 9. Remote |
| 5. HDMI In/ Out | 10. RS422 In/Out |

MAIN FEATURES

- Internal SDI to HDMI Converter
- Closed Caption : CEA-608/708/Line21(SDI)
- Color Calibration (Gamma 2.2, Color Temperature 3200K, 6500K, 9300K)
- Waveform(YCbCr/RGB)/ Vectorscope Parade Support(SD/HD SDI)
- Selectable Y/R/G/B Histogram(SD/HD SDI)
- 3G SDI LEVEL A/B (YCbCr, RGB 4:4:4) Support
- SDI Embedded 16CH Audio Level Meter
- SDI Embedded 2CH Select Audio Waveform
- Focus Assist(SD/HDS DI)
- False Color(SD/HD SDI)
- Y Clip Guide Min/Max Select (SD/HD SDI)
- 12bit to 8bit Dithering
- Dynamic UMD Support
- DSLR Scaling (HDMI)
- Blue Only, Mono
- Maker
- Time Code Display
- Monitor External Control : Remote , RS422(Daisy Chain)
- Selectable 2 User Key
- DPMS Select
- Color Bar / 100% White Internal Patten
- Easy Menu Control by Jog

MENU TREE & CONTROL

1. Menu Tree



Main menu includes

- 1) Picture Settings
- 2) Color Settings
- 3) Audio Settings
- 4) Market Settings
- 5) Remote Settings
- 6) SDI Analyze
- 7) System Settings

The picture above shows Audio Settings menus in Ikegami monitor.

2. Menu Control

Menu control can be handled in two ways by

- 1) Main Select Jog
 - 2) Front Keys
- Press Menu button or Main Jog to enter menu
 - Use Up / Down keys on front or turn the main jog to choose desired menu
 - To enter desired menu press Enter key or Main Jog
 - To exit to the previous step press Exit key or press Main Jog for 2 seconds
 - Menu turns to blue when selected
 - Grey menus are not yet activated

TO GET STARTED

To get Ikegami monitor started, connect required power and choice of your input signal. Turn on the power button on the back and the front. When not in use power button on the front will shut off the monitor.

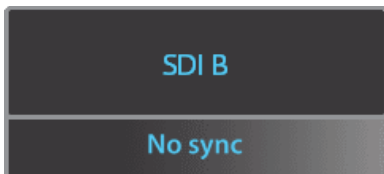
To choose the right input signal after cable connection, please use buttons on front including

1) SDI A

- picture below will be shown on the right bottom corner of your screen with your resolution



2) SDI B



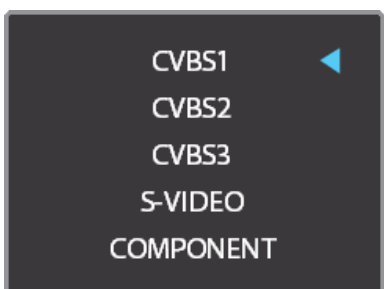
3) DVI / HDMI

- Use either up and down keys or Main jog to move to your input. Then press either enter or Main Jog to select

- Blue arrow shows your choice and when selected the menu turns to blue



4) Analog



MENU CONTROLS AND FUNCTIONS

1. Picture Settings



■ Brightness

- used to control brightness(offset) level from 0 to 100

■ Contrast

- used to control contrast(gain) level from 0 to 100

■ Chroma

- used to control chroma(saturation) level from 0 to 100

■ Aperture

- used to control sharpness level from 0 to 24 (0 for smooth and 24 for edge)
- Ikegami recommends to use internal pattern edge for easier setting

■ NTSC Setup

- used to control the difference black level when NTSCJ for Japan is used
- used for analog signal only

MENU CONTROLS AND FUNCTIONS

2. Color Settings



■ Color Temp

- used to control color temperature
- users can choose 3200K, 6500K, 9300K, User 1, User 2, and User 3
- in user # mode, users can define RGB Gain and Bias values for own purpose

■ Gain Red/Green/Blue

- changes only in user # mode
- used to set R/G/B Gain level from -128 to 128

■ Bias Red/Green/Blue

- changes only in user # mode
- used to set R/G/B Bias level from -50 to 50

■ Color Copy

- used to set standard for user # mode
- select color copy and choose among 3200K, 6500K, or 9300K, then preset values will be shown in RGB Gain and Bias. Users can define their own values based on these preset values.

MENU CONTROLS AND FUNCTIONS

3. Audio Settings



■ Volume

- used to control volume level of the internal speaker or audio out on the back of the monitor from 0 to 100

■ Source Select

- used to select between Internal and External source of audio
- when an external source is connected to audio in, select External

■ Mute

- used to turn off entire audio volume for all sources both internal and external
- to turn back on the audio volume to previous level select OFF

■ Level Meter (SDI)

- used to set the level meter for embedded audio only available in SDI input
- users can choose Off, 16 Ch Horizontal, and 16 Ch Vertical
- 16 Ch Horizontal shows 8 channels on each side horizontally
- 16 Ch Vertical shows 8 channels on each side vertically

■ Level Meter Position

- used to select audio level meter position on screen depending on user's display
- users can choose Top, Middle, and Bottom for both horizontal and vertical

■ Level Meter Reference

- used to select between -18dB and -20dB depending on user's source
- when -20dB is selected, yellow area expands to next marking. Audio level meter within selected value turns to green and exceeded audio level is displayed in yellow

■ Level Meter Display

- used to set the display method for audio level meter between Group and Pair.
- Pair represents level meter in even and odd, and Group shows first 8 channels on left and next 8 channels on right

MENU CONTROLS AND FUNCTIONS

3. Audio Settings (Continued)



■ Sound Channel (SDI)

- used to set embedded audio channel for internal speaker or Audio Out
- select from CH1, CH2, CH1+CH2, CH3, CH4, CH3+CH4, CH5, CH6, CH5+CH6, CH7, CH8, CH7+CH8, CH9, CH10, CH9+CH10, CH11, CH12, CH11+CH12, CH13, CH14, CH13+CH14, CH15, CH16, and CH15+CH16
- when CH1 is chosen, user can hear Ch1 from both speakers. When CH1+CH2 is chosen, user can hear Ch1 from left speaker and Ch2 from right speaker

■ Audio Waveform (SDI)

- used to show audio level meter in waveform for easier representation and fast analyze
- available in CH1+CH2, CH3+CH4, CH5+CH6, CH7+CH8, CH9+CH10, CH11+CH12, CH13+CH14, CH15+CH16 and Off

■ Audio Waveform Blend

- used to fade off audio waveform on screen for better display

MENU CONTROLS AND FUNCTIONS

4. Marker Settings



■ Marker On/Off

- used to activate the marker function
- Marker should be ON to use any features in Marker Setting menu

■ Line Marker

- used to select user's desired marker type
- available in off, 16:9, 4:3(on air), 15:9, 14:9, 13:9, 1.85:1, 2.35:1, 1.85:1 and 4:3

■ Center Marker

- used to turn on and off center marker

■ Safety Area

- used to select safety area among off, 80%, 85%, 88%, 90%, 93% and 100%

■ Marker Mat

- used to change darkness of areas out of line marker
- select level from OFF (transparent) to 7 (black)

■ Marker Color

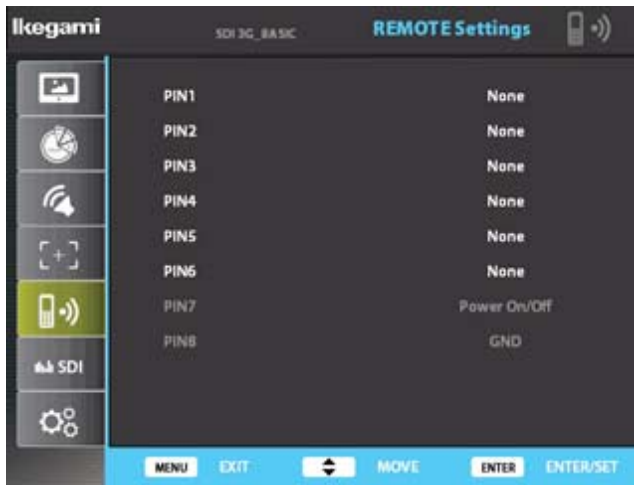
- used to change marker color on the screen
- select from blue, green, red, gray, black, and white

■ Corner On/Off

- used to show safety area by ticks rather than a box
- Safety area shown in regular line when the feature is off

MENU CONTROLS AND FUNCTIONS

5. Remote Settings



To help users to control this monitor from a distance using their own controller, it includes a Remote port on the back of the monitor with 6 pins (Pin 7 and 8 are used for Power and Ground)

Upon user's needs, 6 Pins can be assigned to features in the monitor, including

- 1) tally red
- 2) tally green
- 3) SDI A
- 4) SDI B
- 5) CVBS1
- 6) CVBS2
- 7) CVBS3
- 8) S-VIDEO
- 9) COMPONENT
- 10) HDMI
- 11) DVI
- 12) 16:9 MARKER
- 13) 4:3 MARKER

MENU CONTROLS AND FUNCTIONS

6. SDI Analyze



■ Focus Assist

- used to color the pixels in the shape or boundary area of the image to inform the user to make the best focus

■ Focus Assist Level

- used to set the focus assist level from 0, the strongest, to 10, the weakest

■ Focus Assist Color

- used to set the focus assist color from red, green, and blue

■ Waveform / Vector

- used to turn on and off waveform and vector function
- available in WF(Y/G), VT, WF(Y/G)+VT, WF(YCbCr/RGB), WF(YCbCr/RGB)+VT, and off

■ Waveform Select

- used to select between YCbCr and RGB for Waveform

■ Waveform Blend

- used to select the transparency option of Waveform and Vectorscope on the screen

■ Time Code

- used to activate the time code among VITC, LTC, Off

■ Time Code Blend

- used to select the transparency option of Time Code on the screen

■ Closed Caption

- used to activate closed caption among CC608(Line21), CC608(ANC), CC708 and Off

■ Histogram

- used to turn on and off histogram function
- available in red(R), green(G), blue(B), and black(Y)

- Histogram graph represents how designated color is shown in the screen. At the bottom of the graph, there is color level of designated color and histogram bar above that level shows how much designated color is exposed in the screen.

MENU CONTROLS AND FUNCTIONS

7. System Settings



■ Scan

- used to change the scan mode among zero scan, over scan, and pixel to pixel
- when pixel to pixel is on, turn the main jog to move the position
- **when system setting is in pixel to pixel, marker features don't work**

■ Aspect

- used to change the display ratio among full screen, 16:9, and 4:3

■ Blue/Mono

- used to change the display among off(regular), mono, and blue

■ HV Delay

- used to observe blanking area for H sync and V sync
- **when system setting is in H/V delay, marker features don't work**

■ Internal Pattern

- used to turn on internal pattern among off, color bar, and white

■ Remote ID

- when more than 1 monitor is used, assign the monitor to user's desired number

■ Backlight

- to control backlight of screen from 0 to 100

■ User Key 1 & 2

- to assign programmable key 1&2 on front to user's desired / frequently used feature among : source ID, blue/mono, DSLR scaling, false color, and Y clip guide

■ OSD Position

- used to change the osd position among Center, Top-Left, Top-Right, Bottom-Left and Bottom-Right

MENU CONTROLS AND FUNCTIONS

7. System Settings (Continued)



■ Source ID (UMD)

- enables users to enter input source name in the display
- select from off, manual(BG), manual(Char), and UMD
- when manual(BG/Char) is chosen, user needs to enter source name manually at Source ID Character below. The difference between BG and Char is BG is with black box to highlight source name and Char is with source name only
- when UMD is chosen, the monitor receives source name automatically from the source and shows in black line at the bottom using RS 485

■ Source ID Character

- used to enter desired source name up to 5 characters

■ Source ID Position

- used to show source name that user entered at user's desired location on screen
- available in top-left, top-center, top-right, bottom-left, bottom-center, and bottom-right

■ Source ID Color

- used to change the color of the source name that user entered

■ DSLR Scaling

- used to scale the image with different resolution of the camera to fill the screen
- activates with HDMI signal only
- available only with Canon Camera 5DII and 7D

■ Power Saving

- select between off and DPMS
- when DPMS is selected and there's no input signal for longer than 15sec, monitor takes sleep mode
- LED light on front: red-power off, green-power on, orange blink-no input, orange-DPMS(sleep mode)

■ De-Interlace Mode

- Used to change the mode between normal mode and field mode

MENU CONTROLS AND FUNCTIONS

7. System Settings (Continued)



■ Factory Reset

- used to reset the monitor to factory default setting

SPECIFICATION

HMM-1850			
Display			
Screen Size		18.5 "	
Max Resolution		1920 X 1080	
Pixel Pitch		0.100mm X 0.3mm	
Brightness		350cd/m²(Typical)	
Contrast Ratio		1000:1	
Aspect Ratio		16:9	
Viewing Angle (H/V)		178°/178°	
Color Depth		16.7M (True 8bit)	
Input Connector			
2 x BNC		SDI (SD/HD/3G) 2Channel Input	
3 x BNC		3 CVBS, S-Video, Component Inputs	
1 x HDMI		HDMI Input	
1 x DVI		DVI Input	
1 x Phone Jack		Analog Stereo Audio Input	
1 x RJ45 Jack		Remote Control	
1 x RJ45 Jack		RS422 Monitor Control	
1 x HDMI		PGM Download Port	
Output Connector			
1 x BNC		SDI Select Channel Output	
1 x HDMI		SDI to HDMI Converter Output	
1 x Phone Jack		Analog Stereo Audio Output	
1 x RJ45 Jack		RS422 Daisy Chain Output	
2 x Speaker		2 X 2W	
Input Signal Format			
SDI	SMPTE 425M-AB	YCbCr 4:2:2 10bit	1080P (60/59.94/50)
		YCbCr, RGB 4:4:4 10bit,12bit	1080i (60/59.94/50)
			1080P (30/29.97/25/24/23.98)
			1080Psf (30/29.97/25/24/23.98)
		YCbCr, RGB 4:4:4 10bit	720P(60/59.94/50/30/29.97/25/24/23.98)

SPECIFICATION

SDI	SMPTE 274M	YCbCr 4:2:2 10bit	1080i (60/59.94/50)
			1080P (30/29.97/25/24/23.98)
			1080Psf (30/29.97/25/24/23.98)
	SMPTE 260M	YCbCr 4:2:2 10bit	1035i (60/59.94)
	SMPTE 296M	YCbCr 4:2:2 10bit	720P(60/59.94/50/30/29.97/25/24/23.98)
	SMPTE 125M	YCbCr 4:2:2 10bit	525i (NTSC 59.94)
	ITU-R BT.601	YCbCr 4:2:2 10bit	625i (PAL 50)
	2K Format	YCbCr 4:2:2 10bit	2048 x 1080P (24/23.98/24sF/23.98sF)
ANALOG	COMPONENT		1080P (60/59.94/50)
			1080i (60/59.94/50)
			1080P (30/29.97/25/24/23.98)
			720P(60/59.94/50)
	CVBS, S-Video		NTSC(525/59.94i) , PAL(625/50i)
HDMI			480i/480P/576i/576P/1080i/1080P
DVI			VGA, SGA, XGA, SXGA, WXGA
Dimensions			
Outline Dimension			17.4" x 12.1" x 2.4"
(W x H x D)			(443mm x 308mm x 61mm)
Net Weight			17.63lbs (8000g)
General			
Power			DC12~ 24V / AC 110~240V (50~60Hz)
Power Consumption			26W
Operating Temperature			0~40℃ (32~104°F)

WARRANTY CARD

Product Name	18.5" HD-SDI / 3G Broadcast Monitor			
Client Address	Name		Telephone	
	Address			
Dealer (Store Location)	Store		Telephone	
	Address			
	Purchase Date (YYYY / MM / DD)		Warranty Period	One (1) year from purchase date
	Serial Number		Purchase Price	

MEMO

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