

GY-LS300CH INSTRUCTIONS Notification of Changes

This is a notification on the changes or additions to the features and changes in the onscreen display. Please read this together with the "INSTRUCTIONS".

"C4K" and "C2K" added to System under Record Format

"C4K" and "C2K" are added to [System]→[Record Set]→[Record Format]→[System].

System	Format	Resolution	Frame Rate	Bit Rate
C4K	Quick Time	4096x2160	23.98p 24.00p	150 M 70 M
C2K	Quick Time	2048x1080	23.98p 24.00p	50 M (YUV422) 50 M (XHQ)

Memo:

- Each item for slot B is fixed at the same setting as slot A.
- When CK2 is set, live streaming function cannot be used.
- When CK4 is set, the network function cannot be used.
- When CK4 or CK2 is set, composite video output is disabled.
- When CK4 or CK2 is set, the time stamp function cannot be used.

Bit Rate added to System "C4K"

"70M" is added to [System]→[Record Set]→[Record Format]→[Bit Ratel.

System	Format	Resolution	Frame Rate	Bit Rate (new values are in bold)
4K	Quick Time	3840x2160	30p 25p 24p	150 M 70 M

Memo:

When 4K is set, the network function cannot be used.

Usable Cards

Format Setting and Usable SD Card Combinations

System	Format	Bit Rate	Usable SD Card
C4K, 4K	Quick	150 M	UHS-I U3 or higher
0410, 410	Time	70 M	Class 10 or higher
C2K		50 M (YUV422), 50 M (XHQ)	
		50 M (YUV422), 50 M (XHQ)	
HD		35 M (UHQ)	Class 6 or higher
	AVCHD	-	Class 4 or higher
SD	-	-	
Web	-	-	

Estimated Recordable Time of SD Cards

When [System]→[Record Set]→[Record Format]→[Format] is set to "QuickTime".

System	C4K, 4K		C2K, HD		SD	W	eb
Resolution	2160p		1080i/1080p		480i/ 576i	540p	270p
Bit Rate	150 M	70 M	XHQ	UHQ	-	HQ	LP
4GB	3	6	9	12	47	130	285
8GB	6	13	18	25	95	270	580
16GB	12	26	36	50	190	540	1160
32GB	25	52	72	100	380	1080	2320
64GB (SDXC)	50	105	145	200	760	2160	4720
128GB (SDXC)	100	210	290	400	1520	4320	9440

(Unit: minute)

Histogram feature added

The histogram shows the brightness distribution, and is employed mainly for checking the exposure of the image.

- Set the histogram feature to ON.
 - Set [Main Menu]→[LCD / VF]→[Display Settings]→[Histogram] to On. You can also press the user button that is assigned with "Histogram".
- 2. Set the upper and lower limits of the histogram display. After setting, the brightness level is displayed in red color.

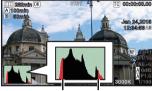
Item	Settings	Options
	Sets the maximum brightness limit for changing the histogram display color	
Bottom	Sets the minimum brightness limit for	0 % to 105 % (in 5 % increments)

Example 1) Top 110 %, Bottom 0 %

changing the histogram display color |Default value: 20 % (0F-stop) Example 2) Top 90 %, Bottom 10 %



* The area in red is not displayed.



Bottom Top

How to read the histogram

- The vertical axis denotes the number of pixels.
- The horizontal axis denotes the pixel brightness.

The following setting values are available when [Camera Process]→ [Gamma] has been set to "J-Log1".

Top:
[Setting Values: -5F-stop, -4F-stop, -3F-stop(2%), -2F-stop, -1F-stop, 0F-stop(18%), ¹/₃F-stop, ²/₃F-stop, 1F-stop, 1¹/₃F-stop, 1²/₃F-stop, 2¹/₃F-stop, 2¹/₃F-stop, 2¹/₃F-stop, 3²/₃F-stop, 3¹/₃F-stop, 3²/₃F-stop, 4¹/₃F-stop, 4²/₃F-stop, 5F-stop, 5¹/₃F-stop, 5¹/₂F-stop]

Bottom:

| Setting Values: -6F-stop, -5F-stop, -4F-stop, -3F-stop(2%), -2F-stop, -1F-stop, ● 0F-stop(18%), ¹/₃F-stop, ²/₃F-stop, 1F-stop, 1¹/₃F-stop, 1¹/₃F-stop, 2F-stop, 2¹/₃F-stop, 2F-stop, 2F-stop, 3F-stop, 3F-stop, 3F-stop, 4F-stop, 4¹/₃F-stop, 4²/₃F-stop, 5F-stop, 5¹/₃F-stop]

Spot meter feature added

The brightness of the object during shooting is displayed. This function is useful when setting video or stage lighting or when specifying camera exposure.

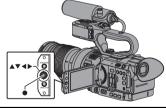
A cursor indicating the location and the brightness (%) of that location are displayed in the images shown on the LCD monitor and viewfinder screen.

- Zebra patterns display the brightness of output video signals.
- This function allows you to check the brightness of input images from the lens without depending on image processing such as

Memo:

- Spot meter may not be consistent with the zebra display range
- When [Camera Process]→[Gamma] is set to "Cinema", the 100IRE
- output is not consistent with the 100 % display.

 When [Camera Process]—[Gamma] is set to "ITU709" or "Cinema", a maximum dynamic range of "400 %" is displayed. When "J-Log1" is set, a maximum dynamic range of "800 %" is displayed
 - Select one of the following from [Main Menu]→[Camera Function]→[USER Switch Set]→[Spot Meter].



Item	Settings	Color of Frame Indicating the Position
Max & Min	Displays the brightness (%) and positions of the brightest and darkest areas in the screen. Frames may also be stopped at the current positions.	●Max: Green ●Min: Yellow
Max	Displays the brightness (%) and position of the brightest area in the screen. Frames may also be stopped at the current positions.	Green
Min	Displays the brightness (%) and position of the darkest area in the screen. Frames may also be stopped at the current positions.	Yellow
Manual	Displays the brightness (%) of the specified position.	Green (Blinks in green when specifying the position)

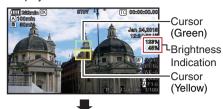
2. Assign the "Spot Meter" function to any of the user buttons.

Memo:

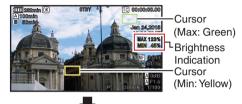
- The "Spot Meter" function is added to the "User Switch Set Item".
 - Press the user button that is assigned with "Spot Meter" The operation switches as below when the button is pressed.

When [Max & Min] / [Max] / [Min] is selected

The cursors appear according to the setting when the button is pressed. Green and yellow frames appear, and the brightness levels of these areas are displayed.



(2) Hold down the button in the state in (1), the positions of the brightest (Max) and darkest (Min) areas in the screen are automatically detected with regard to the changes of the object, and the brightness level of these areas are displayed.



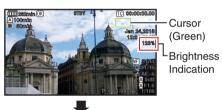
③ Pressing the button in the state in ② stops the automatic position detection. The frames are fixed at the stopped positions and the brightness levels are displayed.

By pressing the button, the cursors and brightness indication disappear.



When [Manual] is selected

1) The brightness of the cursor position is displayed when the button is pressed.

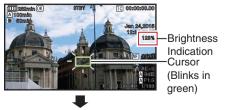


(2) By pressing the button, the cursors and brightness indication disappear.



③ Hold down the button in the state in ① or ②, the cursor blinks in green. Move the cursor with the cross-shaped button (▲ ▼ ◀ ▶) to specify the position to display the brightness.

When you decide on the position, press the Set button (•) to confirm.



4 Frames are fixed at the stopped positions and the brightness is displayed.

Memo:

When the brightness is 0 % in the entire screen, the frame is fixed in the center.

Setting items changed and added to menu item [Gamma]

Setting items are added and changed in [Camera Process]→[Gamma]. ITL1709

Sets to a gamma curve with a dynamic range extended up to 400 % based on ITU-R709.

Cinema: Sets to a gamma curve adjusted for use with a TV monitor based on

the print film characteristic for movie.
"Gamma Level" at +5 and "Knee Level" at 85% result in a high contrast image close to the S-shaped characteristic of a print-through curve.

J-Log1: Sets to a LOG curve with a maximum dynamic range of 800 % coded with the logarithmic curve based on the post-production process. [Setting Values: •ITU709, Cinema, J-Log1]

Memo

- When [System]→[Record Set]→[Record Format]→[System] is set to "SD", "HD+Web" or "HD" and [Resolution] is set to "1280×720", "J-Log1" cannot be selected.
- When "ITU709" is selected and [Gamma Level] is "0", (ITU709) is displayed.
- When "J-Log1" is selected, [Smooth Trans], [FAW] and [Face Detect] under [Camera Function] cannot be selected
- When "J-Log1" is selected, only [White Balance] under [Camera Process] can be selected.
- When "J-Log1" is selected, Iris, Gain, Shutter and White Balance mode will switch to manual adjustment mode.

Setting value changed in [GAIN L/M/H]

The setting values when [Camera Process]→[Gamma] is set to

"J-Log1" are changed.

■ When [LCD / VF]→[Display Settings]→[Gain] is set to "dB"

[Setting Values: -6dB, -3dB, 0dB, 3dB, 6dB, 9dB, 12dB, 15dB, 18dB, 21dB,

When [LCD / VF]—[Display Settings]—[Gain] is set to "ISO" [Setting Values: ISO400, ISO500, ISO640, ISO800, ISO1000, ISO1250, ISO1600, ISO2000, ISO2500, ISO3200, ISO4000, ISO5000, ISO6400, ISO8000, ISO10000, ISO128001

Setting value changed in [Lolux]

The setting values when [LCD / VF]→[Display Settings]→[Gain] is set "ISO" are changed.

When [Camera Process]→[Gamma] is set to "J-Log1": [Setting Values: ● ISO25600, ISO51200] When [Camera Process]→[Gamma] is set to "ITU709" or "Cinema": [Setting Values: ● ISO12800, ISO25600]

[LCD/VF 1D-LUT] added to menu item

[LCD/VF 1D-LUT] is added to [LCD / VF]

Only when [Camera Process]→[Gamma] is set to "J-Log1", you can configure whether to switch the LCD monitor/viewfinder screen to display at a luminance close to that of ITU-R709 or to display in LOG.

Off

Displays the image recorded using Log as it is.

On:

Displays the image recorded using Log at a luminance close to that of ITU-R709.

SDI output, HDMI output and the recorded image remain unchanged in Log. [Setting Values: ● Off, On]

[Gamma] added to menu item

[Gamma] is added to [LCD / VF]→[Display Settings].

Displays the gamma setting on the display screen in Camera mode. [Setting Values: Off, ●On]

Setting value changed in menu item [Color Matrix]

The setting value of [Camera Process]→[Color Matrix] is changed.

ITU709

Sets to a standard color matrix. (Equivalent to ITU-R709) Cinema Vivid:

Sets to a vivid color matrix that is similar to the screen characteristics of movies.

Cinema Subdued:

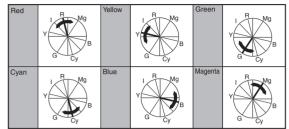
Sets to a subdued color matrix that is similar to the screen characteristics of movies. [Setting Values: ● ITU709, Cinema Vivid, Cinema Subdued]

[Adjust] added to menu item Color Matrix

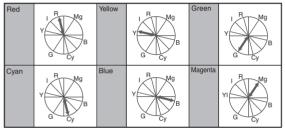
[Adjust] is added to [Camera Process]→[Color Matrix].
 The color matrix of the camera recorder can be adjusted to a color of the user's preference.

- When shooting is performed using multiple cameras, the colors of the different cameras can be adjusted, and a color of the user's preference can be set on this camera recorder.
- The saturation, hue and brightness of the primary and complementary colors (6 colors in total) can be set individually.
- Adjust the color on the vector scope and waveform monitor using the DSC color chart.
- The adjusted values of "Standard", "Cinema Vivid", and "Cinema Subdued" in [Color Matrix] can be stored individually.
- Select [Camera Process]→[Color Matrix] / [Adjust].
- 2. Hue adjustment [Setting range: -5 to +5] (roughly ± 5°)
 - Select the color using the cross-shaped button (▲▼) and confirm
 - using the cross-shaped button (▶). (The cursor moves to "Hue".) Pressing the cross-shaped button (▲) rotates the hue in the clockwise direction on the vector scope.

 Pressing the cross-shaped button (∇) rotates the hue in the
 - anti-clockwise direction on the vector scope.



- 3. Saturation adjustment [Setting range: -10 to +10] (roughly \pm 10%)
 - Press the cross-shaped button (>) to move the cursor to "Saturation"
 - Each of the colors changes in the direction indicated by the arrow on the vector scope.
 - Pressing the cross-shaped button (A) moves the color outward from the center of the circle on the vector scope.
 - Pressing the cross-shaped button (▼) moves the color toward to the center of the circle on the vector scope.



- 4. Brightness adjustment [Setting range: -10 to +10] (roughly ± 10%)
 Pressing the cross-shaped button (▲) lightens; and pressing the
 - cross-shaped button (♥) darkens. Press the cross-shaped button (▶) to return the cursor to "Brightness"

[Black Paint] added to menu item

[Black Paint] is added to [Camera Process].

The black color cast of Rch and Bch can be adjusted individually.

- Increase the number:
- Strengthens the red/blue.
- Decrease the number:

Weakens the red/blue. [Setting Values: R/B: -50 to +50 (● 0)]

Icon display added when zebra function is "On"

During zebra pattern display, (zebra icon) is displayed on the display screen in Camera mode.

Setting items changed in menu item [Rec Trigger]

Setting items in [A/V Set]→[Video Set]→[HDMI/SDI Out]→[Rec Trigger] are changed.

ĬЙDŃĨ:

Superimposes the trigger signals in tandem with the [HDMI] terminal as well as the [REC] button on the camera body and outputs the recording/stop control signals to the compatible device.

SDİ: Superimposes the trigger signals in tandem with the [SDI OUT] terminal as well as the [REC] button on the camera body and

outputs the recording/stop control signals to the compatible device. HDMI+SDI: Superimposes the trigger signals in tandem with the [HDMI / SDI OUT] terminal as well as the [REC] button on the camera body and outputs the recording/stop control signals to the compatible device.

[Setting Values: •Off, HDMI, SDI, HDMI+SDI]

- When [A/V Set]—[Video Set]—[HDMI/SDI Out] is set to "Off", [Rec Trigger] is fixed at "Off" and selection is disabled.
- When [System]—[Record Set]—[Rec Mode] is set to "Interval Rec" or "Frame Rec", [Rec Trigger] is fixed at "Off" and selection is disabled.
- Set to "Off" when connecting to a device that does not support record trigger.

Bit Rate added to live streaming

Setting values are added to [System]→[Network] / [Settings]→[Live Streaming Set]→[Frame & Bit Rate]

No. of Frames for Frame & Bit Rate	Resolution	New values are in bold
60i, 60p, 30p	1920x1080	60i (12 Mbps), ● 60i (8 Mbps), 60i (5 Mbps), 60i (3 Mbps)
	1280x720	30p (8 Mbps), ● 30p (5 Mbps), 30p (3 Mbps), 30p (1.5 Mbps)
	720x480	60i (8 Mbps), 60i (5 Mbps), ● 60i (3 Mbps), 60i (1.5 Mbps), 60i (0.8 Mbps), 60i (0.3 Mbps)
	640x360	30p (3 Mbps), ● 30p (1.5 Mbps), 30p (0.8 Mbps), 30p (0.3 Mbps)
50i, 50p, 25p	1920x1080	50i (12 Mbps), ● 50i (8 Mbps), 50i (5 Mbps), 50i (3 Mbps)
	1280x720	25p (8 Mbps), ● 25p (5 Mbps), 25p (3 Mbps), 25p (1.5 Mbps)
	720x576	50i (8 Mbps), 50i (5 Mbps), ● 50i (3 Mbps), 50i (1.5 Mbps), 50i (0.8 Mbps), 50i (0.3 Mbps)
	640x360	25p (3 Mbps), ● 25p (1.5 Mbps), 25p (0.8 Mbps), 25p (0.3 Mbps)

[Adaptive Bit Rate] and [PCR Jitter] added to menu item

The following items are added to [System]→[Network] / [Settings]→[Live Streaming Set]→[Streaming Server]→[Server1] / [Server2] / [Server3] / [Server4].

Adaptive Bit Rate

If "On" is selected, the bit rate setting value of live streaming is set to maximum limit, and the bit rate is changed automatically according to changes in the network bandwidth. [Šetting Values: Ón, ●Off]

- Adaptive bit rate setting is possible only when [Type] is set to "ZIXI" and [Latency] is set to either "Medium" or "Low".
 - The bit rate is displayed on the status screen only when "On" is set.
 - **PCR Jitter** Setting to "Low" reduces to PCR jitter of live streaming. [Setting Values: ●Normal, Low]

Memo:

This item is selectable only when [Type] is set to "MPEG2-TS/UDP".

[APN] added to menu item

[APN] is added to [System]→[Network] / [Settings]→[Connection Setup].

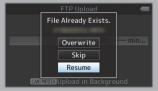
- APN: Access Point Name
- * This item is gray out and cannot be selected if APN cannot be set for the adapter attached.

Caution:

The APN setting is written into the cellular adapter, not this camera recorder. Setting a wrong APN may result in communication failure or expensive bills from the telecommunications company. Set the APN correctly.

FTP resume feature added

When FTP transfer starts and there is a file of the same name on the server with a file size smaller than the file to be transferred, the file on the server will be regarded as an interrupted file during a FTP transfer. A confirmation screen to resume transfer (append writing) appears.



If "Resume" is selected. FTP transfer is carried out such that it appends from the position where it was interrupted. When FTP transfer ends normally, "Successfully Completed." appears on the screen.

Memo:

- FTP server equipped with Resume function is required.
- If [System]→[Network] / [Settings]→[Clip Server]→[Clip-FTP1/2/3/4]→[Protocol] is set to "SFTP", the "Resume" function is disabled.
- If "HTTP" is selected in the [Select FTP Proxy] screen of the network connection setting, the Resume function is disabled.

Setting value "ZIXI" added to menu item [Protocol]

"ZIXI" is added to [System]→[Network] / [Settings]→[Clip Server]→
[Clip-FTP1/2/3/4]→[Protocol].
If "ZIXI" is selected, [Username] in [System]→[Network] /
[Settings]→[Clip Server]→[Clip-FTP1/2/3/4] changes to [Stream ID].
[Setting Values: ●FTP, SFTP, FTPS, FTPES, ZIXI]

- To use the "ZIXI" setting, a dedicated server is needed separately.
- If "ZIXI" is set, the "Resume" function is enabled.

Items added to thumbnail screen

The following items are added to the metadata display on the detailed screen of the thumbnail screen.

- Clip Size
- Gamma

Clip Continuous added to recording mode for AVCHD

"Clip Continuous" is added to the setting value for "AVCHD" format in [System]→[Record Set]→[Rec Mode].
Clip Continuous Rec can also be operated in "AVCHD" mode.

Setting value "Side Cut" added to menu item [SD Aspect]

"Side Cut" is added to the setting value for [A/V Set]→[Video Set]→[SD Aspect].

Displays as a wide image with the top and bottom blackened.

Squeeze:

Displays image that is squeezed horizontally.

Side Cut:

Displays wide screen with the left and right sides cut off.

[Setting Values: ●Squeeze, Letter, Side Cut]

Memo:

- When "SD" is selected in [System]→[Record Set]→[Record Format]→ [System], "Squeeze" and "Letter" can be selected.
- When "C4K" or "C2K" is selected in [System]→[Record Set]→[Record Format]→[System], this item cannot be set.

2.5x display mode added to Expanded Focus function in 4K and C4K mode

An approximately 2.5x display mode is added to the Expanded Focus function when "4K" or "C4K" is selected in [System]→[Record Set]→ [Record Format]→[System]. You can use the Set button (●) to switch between the conventional dot by dot equivalent (approximately 5x) display and the 2.5x display.

Upon power on, the display of the initial Expanded Focus is dot by dot equivalent (approximately 5x).

Setting value "VSM-z" added to menu item [Grip Zoom]

"VSM-z" is added to the setting value for [Camera Function]→[Grip Zoom]. For assigning the zoom, focus and VSM zoom functions to the zoom

lever at the grip.

When "VSM-z" is set, zooming within the VSM range is made possible by varying the scan range using the zoom lever at the grip. The zoomed location is displayed on the zoom display location on the upper right corner of the screen. The maximum zoom range is approximately 1.2x for "4K" and approximately 2.3x for "HD". [Setting Values: ●Zoom, Focus, VSM-z]

[AF Speed] added to menu item

[AF Speed] is added to [Camera Function].

For setting the AF operation speed. [Setting Values: Fast,

Middle, Slow]

Memo:

The variation in speed may be small depending on the lens.

Setting value "Area" added to menu item [AF Assist]

"Area" is added to [Camera Function] -- [AF Assist].

"Off" the AF Assist function.

Far/Near:

This option allows you to shift the auto focus point to near and far directions by operating the focus manually during AF. Focus is automatically adjusted to a focus point near the position where the focus cannot be operated further.

Area:

Selecting this option displays the [🗓] icon in the area.

Operating the focus manually while in the AF mode displays the focus area on the left, center, and right side for about 2 seconds. Pressing the zoom lever at the grip each time within 2 seconds allows you to move the orange frame to select the focus area.

After selecting the area, focus is automatically adjusted to a focus point near the selected area.

[Setting Values: ●Off, Far/Near, Area]

Setting for operating Iris/Shutter/AE Level using iris dial added

Setting value "Iris/Shutter/AE Level" are added to [Camera Function]→ [Iris Dial].

If "Iris/Shutter/AE Level" is selected, the iris dial that is normally used to operate the iris will operate the shutter when the [SHUTTER] button is pressed and will operate the AE level when the [AE LEVEL] button is pressed. After which, the iris dial resumes its iris operation. [Setting Values: ●Iris, Shutter, AE Level, Iris/Shutter/AE Level]

[HDMI TC] added to menu item

[HDMI TC] is added to [A/V Set]→[Video Set]. For setting whether to superimpose the time code to the HDMI output terminal. [Setting Values: ●Off, On]

Memo:

- When [A/V Set]—[Video Set]—[HDMI/SDI Out] is set to "SDI" or "Off", [HDMI TC] is fixed at "Off" and selection is disabled.
- Set to "Off" when connecting to a device that does not support HDMI TC.

Setting values added to marker aspect ratio

Setting values are added to [LCD / VF]→[Marker Settings]→[Marker]→
[Aspect Ratio] in C4K or C2K mode. For selecting the final image aspect ratio to be used from the overall angle of view angle of view.
When [System] is set to "4K", "HD", "SD" or "HD+Web"
[Setting Values: 16:9(+4:3), 2.35:1 Top, 2.35:1 Center, 1.85:1 Top,
1.85:1 Center, ●16:9, 1.75:1, 1.66:1, 14:9, 13:9, 4:3]
When [System] is set to "C4K" or "C2K" [Setting Values: 1:85:1, 1.9:1, 2.35:1, 2.40:1]

Setting value changed in [Resolution] under [HDMI/SDI Out]

	The video output is changed to native frame rate and setting values are added For selecting the resolution of video output from the [HDMI] terminal or [SDI OUT] terminal according to the monitor to be connected. [Setting Values: 576i, 576p, 480i, 480p, 480i, 480i, 480i, 480p, 480i, 480p, 480i, 480i, 480p, 480i, 480i, 480p, 480i, 480i, 480i, 480p, 480i,
	2160/30p, C4K/24p]
	is the side cut icon is the letterbox icon
_	

Memo:

When [System]→[Record Set]→[Record Format]→[Frame Rate] is set to "24.00p", the 576i, 576p, 480i and 480p settings in [Resolution] cannot be selected.

Setting values added to menu item [VSM]

Setting values are added to [System]→[Record Set]→ [VSM] when System is set to "C4K" or "C2K"

The selectable options vary according to the [System]→[Record Set]→ [Record Format]→[System] setting.
• When [System] is set to "C4K":

[Setting Values: ●100%(Super35), 97%, 95%, 92%(C4K), 89%, 86%, 82%(MFT)]
When [System] is set to "C2K":
[Setting Values: ●100%(Super35), 97%, 95%, 92%(C4K), 89%, 86%, 82%(MFT), 76%, 72%, 67%, 63%, 59%, 54%, 52%(Super16), 50%, 46%(C2K)j

When [System] is set to "4K": [Setting Values: ●100%(Super35), 97%, 95%, 92%, 89%, 86%(4K), 83%, 80%(MFT)]

When [System] is set to "HD", "SD" or "HD+Web": [Setting Values: ●100%(Super35), 97%, 95%, 92%, 89%, 86%(4K), 83%, 80%(MFT), 76%, 72%, 67%, 63%, 59%, 54%, 52%(Super16), 47%, 43%(HD)]

Other notes

- Use a support system when attaching a lens weighing 0.8 kg and above
- The "MPEG LA MPEG-2 Patent" described in the "INSTRUCTIONS" of this book is not applicable to this product.

Manufacturer JVCKENWOOD Corporation

3-12, Moriya-cyo, Kanagawa-ku, Yokohama-shi, Kanagawa 221-0022, Japan