

GY-LS300CH INSTRUCTIONS Notification of Changes 2

This is a notification on the addition of new features, feature modifications and onscreen display changes. Please read this together with the "INSTRUCTIONS".

V0400: Version number of supported firmware
* ● denotes default value

4K/60p, 4K/50p HDMI output mode added **V0400**

4K (3840x2160) 60p, 50p output is available from the HDMI terminal of this unit.

- **"4K EXT" is added to the setting value of menu item: [System] → [Record Set] → [Record Format] → [System]**

System	Format	Resolution	Frame Rate	Bit Rate
4K EXT	-	3840×2160	60p 50p	-

Memo:

- The following functions cannot be used when "4K EXT" is configured. Recording to SD card, Network, Display of External Monitor Information, "Regen" setting in TC Generator, and USB Mode (USB mass storage class)
- The setting in the menu item: [A/V Set] → [Video Set] → [HDMI/SDI Out] is fixed at "HDMI".
- The setting in the menu item: [A/V Set] → [Video Set] → [HDMI/SDI Out] [Resolution] is fixed at "2160/60p" or "2160/50p".
- The configurable range in the menu item: [System] → [Record Set] → [Variable Scan Mapping] is "100%" to "86%".
- A blue back output of "480p" or "576p" will be displayed if unsupported monitors and recorders are connected to 4K/60p, 50p YUV 4:2:0.
- Composite video signals will be of blue back output.
- As it cannot be recorded to SD card, the card slot information will not be displayed.

4:2:2 recording mode added to 4K/30p, 4K/25p, 4K/24p

V0400

4:2:2 sampling recording of 4K/30p, 4K/25p, 4K/24p can be made to the SD card inserted in the camera.

- **"150M YUV422" and "70M YUV422" are added to the setting value of menu item [System] → [Record Set] → [Record Format] → [Bit Rate]**

System	Format	Resolution	Frame Rate	Bit Rate (new values are in bold)
4K	Quick Time	3840×2160	30p 25p 24p	150M YUV422 150M 70M YUV422 70M

Memo:

- Network cannot be used when "150M YUV422" or "70M YUV422" is selected.
- "1080/30p", "1080/25p", "1080/24p", or "1080i" can be selected for the [Resolution] setting value in [HDMI/SDI Out] (menu item: [A/V Set] → [Video Set] → [HDMI/SDI Out] [Resolution]). However, the available options change according to the item settings.
- Composite video signals will be of blue back output.

Camera operation functions on Web browser during 4K/30p, 4K/25p, 4K/24p recording added **V0400**

Camera operation functions on Web browser can also be used during 4K/30p, 4K/25p, 4K/24p recording.

- **Menu item: [System] → [Record Set] → [Record Format] → [Network Function] is added**
- **Use network during 4K/30p, 4K/25p, 4K/24p recording**

1 Select "4K" in [System] → [Record Set] → [Record Format] → [System], and select "30p", "25p", or "24p" in [Frame Rate]

2 Select "Enable" in [System] → [Record Set] → [Record Format] → [Network Function] and press the ◀ button or USER3 button

3 Set "On" for [System] → [Network]

Memo:

- Network cannot be used when "150M YUV422" or "70M YUV422" is selected for the setting value of menu item: [System] → [Record Set] → [Record Format] → [Bit Rate].
- "1080/30p", "1080/25p", "1080/24p", or "1080i" can be selected for the [Resolution] setting value in [HDMI/SDI Out] (menu item: [A/V Set] → [Video Set] → [HDMI/SDI Out] [Resolution]). However, the available options change according to the item settings.
- Composite video signals will be of blue back output.
- Live streaming or recording during FTP execution cannot be performed.

High speed shooting feature added

A moving subject can be effectively portrayed by shooting smooth slow motion images.

- **"High-Speed" added to menu item [System]**

"High-Speed" is added to [System] → [Record Set] → [Record Format] → [System].

System	Format	Resolution	Frame Rate	Bit Rate
High-Speed	Quick Time	1920x1080	120/60p 100/50p 120/30p 60/30p 100/25p 50/25p 120/24p 60/24p	50M (XHQ) 35M (UHQ)

Memo:

- The [Rec Mode] is fixed at "Normal".
- The following functions cannot be used when "High-Speed" is selected. Network, Time Stamp Recording, Flicker Correction, Shading, Face Detection and WDR
- The settings for slot B are fixed at the same as slot A.
- For the "TC Generator" setting, only "Rec Run" and "Regen" can be selected.
- It is not possible to set a shutter speed that is slower than the frame rate. (Example: When 120/60p is selected, 1/120 to 1/10000 can be set.)
- The Variable Scan Mapping for the angle of view is fixed at "46%".
- The sensitivity of high speed shooting is lower than normal shooting. In order to capture more beautiful images, it is recommended to perform shooting in a lighted environment.
- The remaining space on the media (recordable time to a SD card) runs out faster than usual. (Example: For 120/60p, as the recording speed is twice as fast as usual, the remaining space on the media is reduced by approximately double the speed.)

Usable SD Cards **V0400**

Format Setting and Usable SD Card Combinations

System	Format	Bit Rate	Usable SD Card
High-Speed	Quick Time	50M (XHQ) 35M (UHQ)	U3 or higher
4K		150M (YUV422) 150M	
C4K		150M	
4K	Quick Time	70M (YUV422) 70M	CLASS10 or higher
C4K		70M	
C2K		50M (YUV422), 50M (XHQ)	
HD	AVCHD	50M (YUV422), 50M (XHQ)	CLASS6 or higher
		35M (UHQ)	
SD	-	-	CLASS4 or higher
Web	-	-	

"46%" added to setting value of Variable Scan Mapping

A fixed angle of view at "46%" for high speed shooting is added to the option for normal shooting.

By using the "46%" setting to perform normal shooting, it is possible to shoot at the same angle of view as high speed shooting.

Variable gain mode added

In addition to the 3 dB increment switching with the GAIN selection switch, it is possible to make finer adjustments using the iris dial.

- **"Variable Gain" added to menu item [Iris Dial]**

"Variable Gain" is added to [Camera Function] → [Iris Dial]. With this additional setting value, the name of the existing option "Iris/Shutter/AE Level" is changed to "Selectable".

If "Selectable" is selected, the iris dial that is normally used to adjust the iris will be used to adjust the variable gain when the user button assigned with Variable Gain is pressed. It is used to adjust the shutter speed and the AE level when the shutter button and AE button are pressed respectively. Pressing the respective buttons after adjustment is complete confirms the setting value, and the iris dial resumes its iris operation.

- **"Variable Gain" added to menu items [USER1] to [USER10] and [LCD KEY▲▼◀▶]**

"Variable Gain" is added to [Camera Function] → [User Switch Set] → [USER1] to [USER10]/[LCD KEY▲▼◀▶].

Memo:

- While in the Variable Gain state, operating the GAIN selection switch and turning off the power of the camera recorder will cancel the Variable Gain mode. The gain setting assigned to the GAIN selection switch will be used.

Manual iris mode added

High speed mode is added to the operation speed during Manual Iris mode.

This allows for quick control using the iris dial.

- **[Manual Iris Mode] added to menu item**

[Manual Iris Mode] is added to [Camera Function].

- Quiet: Controls the iris smoothly. (Existing operation)
- Quick: Controls the iris with high speed. Drive noise can occur depending on the lens used.
- Auto: "Quiet" is enabled during recording. For operations other than recording, "Quick" is enabled to control the iris.

[Setting Values: ● Quiet, Quick, Auto]

Memo:

- This setting may not be effective depending on the lens used.

Zoom operation expanded with Variable Scan Mapping

Besides using only the zoom lever at the grip to perform zoom operations, it is also possible to do so using the zoom lever at the handle, via remote and via web browser.

- **[Zoom Control] added to menu item**

[Zoom Control] is added to [Camera Function].

This item is for selecting the control setting during the following zoom operations.

- Grip on the camera unit
- Zoom lever at the handle of the camera recorder
- Control via remote
- Control via web operation

If "Power Zoom" is selected, it is possible to control the zoom operation of a zoom lens equipped with electronic zoom control function. If "VRSM-z" is selected, it is possible to zoom within the boundary of Variable Scan Mapping by adjusting the scan range of the sensor. The maximum zoom range is approximately 1.2x for "4K" and 2.3x for "HD". The images of the zoom display on the upper right corner of the screen is displayed on the screen.

[Setting Values: ● Power Zoom, VRSM-z]

Memo:

- If "Grip Zoom" is set to "Focus", the grip on the camera unit operates as a focus control regardless of the [Zoom Control] setting.
- "VSM" is changed to "Variable Scan Mapping", and "VSM-z" is changed to "VRSM-z".

Caution:

- With this additional menu item, "VSM-z" is removed from the setting values for [Camera Function] → [Grip Zoom].

Ease function added to Preset Zoom

This function helps to smoothen the speed transition at the start and end of the Preset Zoom operation.

- **[Ease In] added to menu item**

[Ease In] is added to [Camera Function] → [User Switch Set]. This item is for setting the speed transition at the start of the Preset Zoom operation. The larger the setting value, the smoother the transition.

[Setting Values: ● Off, 1-5]

- **[Ease Out] added to menu item**

[Ease Out] is added to [Camera Function] → [User Switch Set]. This item is for setting the speed transition at the end of the Preset Zoom operation. The larger the setting value, the smoother the transition.

[Setting Values: ● Off, 1-5]

Memo:

- If "Off" is selected, the Ease function is disabled.
- When [Camera Function] → [Zoom Control] is set to "Power Zoom", this item appears as "Off" and cannot be selected.

Color matrix setting Natural Mode added

A color matrix of a brighter and more natural hue than the standard has been added. It is effective for shooting under a strong single light source such as stage lighting.

- **Menu item: "Natural" is added to [Color Matrix]**

"Natural" is added to [Camera Process] → [Color Matrix].

[Setting value: Natural, Cinema Subdued, Cinema Vivid, ● ITU709]

Memo:

- When "Natural" is selected, the setting range of [Saturation] and [Lightness] in the [Camera Process] → [Color Matrix]/[Adjust] item is -5 to 0 to +5 respectively.

“98%” added to setting value of zebra pattern

This convenient setting is added to keep the video level within 100% during the video production for playback, screening and broadcasting on nonlinear devices and PC.

■ “98%” added to [Top] and [Bottom] of menu item [Zebra]

“98%” is added to the setting values for specifying the upper and lower limits of the luminance level in [LCD/VF] → [Shooting Assist] → [Zebra]/[Top] and [Bottom].

[Top] [Setting Values: 5% to ● 80% to 95%, 98%, 100%, Over]
[Bottom] [Setting Values: 0% to ● 70% to 95%, 98%, 100%]

Improved LCD backlight brightness

A brightness setting that is 2 times the existing brightness setting has been added.

This improves the visibility and allows for more delicate focusing.

■ Setting Values added to menu item [LCD Backlight]

The brightness is improved by changing the setting value of [LCD/VF] → [LCD Backlight]. Increasing the value increases the brightness.

[Setting Values: -1, ● 0, +1]

Web access port number setting function added V0400

[Port] is added to [System] → [Network]/[Settings] → [Web]. It is for setting the port number when accessing the camera recorder Web page from outside the camera.

Memo :

- The number can be entered using the software keyboard.
- An integer from 1 to 65535 can be entered. (Default value: 80)
- When setting a number other than the default value, use an unused port number.
- For details, consult your network administrator.

[Auto Restart] function added to Live Streaming

[Auto Restart] is added to [System] → [Network] / [Settings] → [Live Streaming Set].

Previously, if the network is disconnected while “Live Streaming” is set to “On”, “Live Streaming” will be set to “Off” automatically. When the network is reconnected, it is necessary to set “Live Streaming” to “On” again manually.

By setting the new [Auto Restart] function to “On”, live streaming is automatically restarted when the network is reconnected.

- On
Live streaming is automatically restarted after the network is reconnected.
- Off
Live streaming does not automatically restart even after the network is reconnected.

[Setting Values: On, ● Off]

Memo :

- If the camera recorder is turned off and then turned on again, live streaming does not start automatically (regardless of the [Auto Restart] setting) even after the network connection has been established.

Setting item changed in [Live Streaming Set] and setting values [Frame Rate] added to menu item

[Frame & Bit Rate] under [System] → [Network]/[Settings] → [Live Streaming Set] is changed to [Frame Rate] and [Bit Rate], and setting values for [Frame Rate] are added.

Frame Rate	Resolution	Setting Value (new values are in bold)
60i,60p,30p	1920×1080	60i(12Mbps), ● 60i(8Mbps), 60i(5Mbps),60i(3Mbps)
	1280×720	60p(12Mbps),60p(8Mbps), 60p(5Mbps),60p(3Mbps), 30p(8Mbps), ● 30p(5Mbps), 30p(3Mbps),30p(1.5Mbps)
	720×480	60i(8Mbps),60i(5Mbps), ● 60i(3Mbps),60i(1.5Mbps), 60i(0.8Mbps),60i(0.3Mbps)
	640×360	60p(3Mbps),60p(1.5Mbps), 30p(3Mbps), ● 30p(1.5Mbps), 30p(0.8Mbps),30p(0.3Mbps)
50i,50p,25p	1920×1080	50i(12Mbps), ● 50i(8Mbps), 50i(5Mbps),50i(3Mbps)
	1280×720	50p(12Mbps),50p(8Mbps), 50p(5Mbps),50p(3Mbps), 25p(8Mbps), ● 25p(5Mbps), 25p(3Mbps),25p(1.5Mbps)
	720×576	50i(8Mbps),50i(5Mbps), ● 50i(3Mbps),50i(1.5Mbps), 50i(0.8Mbps),50i(0.3Mbps)
	640×360	50p(3Mbps),50p(1.5Mbps), 25p(3Mbps), ● 25p(1.5Mbps), 25p(0.8Mbps),25p(0.3Mbps)

Memo :

- The settings cannot be changed during live streaming.
- An encoding bit rate exceeding 8.0 Mbps cannot be selected when [Type] is set to “RTSP/RTP”.
- An encoding bit rate exceeding 5.0 Mbps cannot be selected when [Type] is set to “ZIXI” and [Latency] is set to a value other than “Low”, or when [Type] is set to “RTMP”.
- An encoding bit rate exceeding 3.0 Mbps cannot be selected when [Type] is set to “ZIXI” and [Latency] is set to “Low”.

Caution :

- With the addition of these setting values, “480×270” is removed from the setting values of [Resolution].

SMPTE 2022-1 FEC supported

MPEG2-TS/RTP is added to streaming type and SMPTE2022-1 FEC is supported.

Also, MPEG2-TS/TCP is removed.

■ “RTMP” and “MPEG2-TS/RTP” added to menu item [Type]

“RTMP” and “MPEG2-TS/RTP” are added to [System] → [Network]/[Settings] → [Live Streaming Set] → [Server]/[Live Streaming] → [Server1] to [Server4] → [Type].

[Setting Values: ● MPEG2-TS/UDP, MPEG2-TS/RTP, RTSP/RTP, ZIXI, RTMP]

Caution :

- With the addition of this setting value, “MPEG2-TS/TCP” is removed from the setting values of [Type].

■ [SMPTE 2022-1 FEC] added to menu item

When “MPEG2-TS/RTP” is selected in [System] → [Network]/[Settings] → [Live Streaming Set] → [Server]/[Streaming Server] → [Server1] to [Server4] → [Type], [SMPTE 2022-1 FEC] can be configured. Set to “On” to use FEC (Forward Error Correction). This is a transmission system that recovers the missing packets in the decoding process without having to retransmit the missing packets.

[Setting Values: On, ● Off]

* The decoder must be compatible with SMPTE 2022-1.

■ [FEC Matrix] added to menu item

For setting the amount of FEC (Forward Error Correction) overhead for configuring SMPTE 2022-1.

Memo :

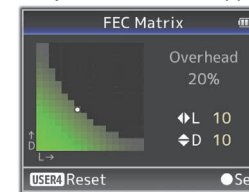
- This item is selectable only when [SMPTE2022-1 FEC] is set to “On”.
- When [Type] is set to “MPEG2-TS/RTP”, only even numbers from 2 to 65530 can be specified as the port number for the transmission destination port.
- When [Type] is set to “MPEG2-TS/RTP” and [SMPTE2022-1 FEC] is set to “On”, N+2 and N+4 port numbers are also used in addition to the port number (N) specified for the transmission destination port.

■ Setting the FEC Matrix

Set the amount of “FEC” (Forward Error Correction) overhead for configuring [SMPTE 2022-1].

1 Select [System] → [Network]/[Settings] → [Live Streaming Set] → [Server]/[Streaming Server] → [Server1] to [Server4] → [Type] → [FEC Matrix], then press the Set button (●)

The FEC adjustment screen appears.



2 Adjust the L and D values

Use the ◀/▶ buttons to adjust the L value, and the ▲/▼ buttons to adjust the D value.

The amount of FEC overhead changes when the L and D values are changed.

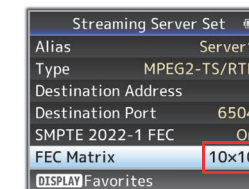
To restore the L and D values to their default values, press the [C.REVIEW/4] button.

Memo :

- Setting range
 - $4 \leq L \leq 20$ (Default value: L = 10)
 - $4 \leq D \leq 20$ (Default value: D = 10)
 - $L \times D \leq 100$ (Default value: LxD = 10×10)

3 Press the Set button (●)

The screen returns to the streaming server setting screen.



Memo :

- Increasing the amount of FEC overhead increases the packet loss resilience but more network bandwidth is used.
- Even with the same amount of overhead, increasing the L value will increase the packet loss (continuous packet loss) resilience.

High reliability mode added to ZIXI

High latency (high reliability) mode is added to ZIXI.

■ “High” is added to menu item [Latency]

“High” is added to [System] → [Network]/[Settings] → [Live Streaming Set] → [Server]/[Streaming Server] → [Server1] to [Server4] → [Latency].

[Setting Values: High, Medium, ● Low, Minimum (ZIXI Off)]

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