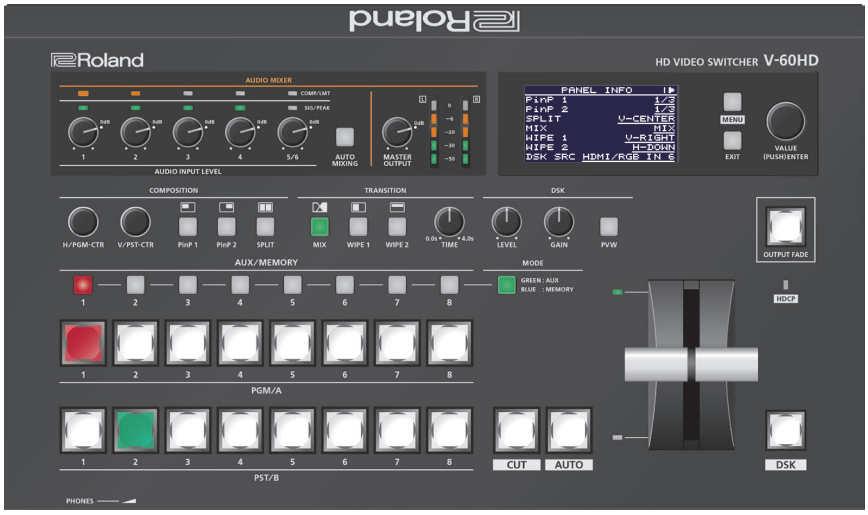
HD VIDEO SWITCHER

V-60HD

Reference Manual

Version 3.1 and later



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Menu List

Pressing the [MENU] button makes the menu appear on the built-in display and on the monitor connected to the MULTI-VIEW connector.

Built-in display (Menu)

Multi-view monitor (OSD menu)

MEMO

- By turning the [VALUE] knob while pressing it, you can change the value more greatly.
- Pressing and holding the [VALUE] knob returns the current menu item you're setting to its default value.

1: VIDEO INPUT

Menu item	Value (bold text: default value)	Explanation
SDI IN 1–4		
INPUT STATUS	(ENTER)	This displays information about the incoming video (video format, size, etc.).
H FLIP	**OFF**, ON	Setting this to "ON" flips the output video horizontally.
BRIGHTNESS	-64–**0**–63	This adjusts the brightness.
CONTRAST	-64–**0**–63	This adjusts the contrast.
SATURATION	-64–**0**–63	This adjusts the saturation.
HDMI IN 5		
INPUT STATUS	(ENTER)	This displays information about the incoming video (video format, size, presence or absence of an HDCP signal, etc.).
FLICKER FILTER	**OFF**, ON	Setting this to "ON" reduces flicker.
ZOOM	10.0–**100.0**–1000.0% (*1)	This adjusts the zoom ratio.
SCALING TYPE	This sets the scaling type.	
	FULL	This always displays the picture expanded to full screen, irrespective of the aspect ratio of the input video.
	LETTERBOX	This enlarges or reduces the incoming video to a full-screen view while keeping the aspect ratio unchanged.
	CROP	This enlarges or reduces the incoming video so that the output picture has no blank margins while keeping the aspect ratio unchanged. Video extending beyond the borders is cut off.
	DOT BY DOT	This performs no scaling.
	MANUAL	Scale according to the "MANUAL SIZE H" and "MANUAL SIZE V" settings below.
MANUAL SIZE H	-2000–**0**–2000 (*1) (*2)	This adjusts the horizontal size.
MANUAL SIZE V	-2000–**0**–2000 (*1) (*2)	This adjusts the vertical size.
POSITION H	-1920–**0**–1920 (*1)	This adjusts the display position in the horizontal direction.
POSITION V	-1200–**0**–1200 (*1)	This adjusts the display position in the vertical direction.
H FLIP	**OFF**, ON	Setting this to "ON" flips the output video horizontally.
BRIGHTNESS	-64–**0**–63	This adjusts the brightness.
CONTRAST	-64–**0**–63	This adjusts the contrast.
SATURATION	-64–**0**–63	This adjusts the saturation.
RED	-64–**0**–63	This adjusts the red level.
GREEN	-64–**0**–63	This adjusts the green level.
BLUE	-64–**0**–63	This adjusts the blue level.
EDID	**INTERNAL**, 800 x 600, 1024 x 768, 1200 x 800, 1366 x 768, 1280 x 1024, 1400 x 1050, 1600 x 1200, 1920 x 1200, 720p, 1080i, 1080p	This sets the input format (EDID) for the HDMI IN 5 connector.

(*1) The range of this value varies according to conditions such as the input/output format. The values listed above are the minimum and maximum values.

(*2) This is available when "SCALING TYPE" is set to "MANUAL."

Menu item	**Value** (bold text: default value)	Explanation
HDMI/RGB IN 6 (*3)		
INPUT STATUS	(ENTER)	This displays information about the incoming video (video format, size, presence or absence of an HDCP signal, etc.).
INPUT 6 ASSIGN	**HDMI**, RGB/COMPONENT	This sets the input connector assigned to channel 6.
AUTO SAMPLING	(EXEC) (*4)	This automatically adjusts the image quality. * Depending on the video, adjusting the image quality might not be possible.
FLICKER FILTER	**OFF**, ON	Setting this to "ON" reduces flicker.
ZOOM	10.0–**100.0**–1000.0% (*5)	This adjusts the zoom ratio.
SCALING TYPE	This sets the scaling type.	
	FULL	This always displays the picture expanded to full screen, irrespective of the aspect ratio of the input video.
	LETTERBOX	This enlarges or reduces the incoming video to a full-screen view while keeping the aspect ratio unchanged.
	CROP	This enlarges or reduces the incoming video so that the output picture has no blank margins while keeping the aspect ratio unchanged. Video extending beyond the borders is cut off.
	DOT BY DOT	This performs no scaling.
	MANUAL	Scale according to the "MANUAL SIZE H" and "MANUAL SIZE V" settings below.
MANUAL SIZE H	-2000–**0**–2000 (*5) (*6)	This adjusts the horizontal size.
MANUAL SIZE V	-2000–**0**–2000 (*5) (*6)	This adjusts the vertical size.
POSITION H	-1920–**0**–1920 (*5)	This adjusts the display position in the horizontal direction.
POSITION V	-1200–**0**–1200 (*5)	This adjusts the display position in the vertical direction.
H FLIP	**OFF**, ON	Setting this to "ON" flips the output video horizontally.
BRIGHTNESS	-64–**0**–63	This adjusts the brightness.
CONTRAST	-64–**0**–63	This adjusts the contrast.
SATURATION	-64–**0**–63	This adjusts the saturation.
RED	-64–**0**–63	This adjusts the red level.
GREEN	-64–**0**–63	This adjusts the green level.
BLUE	-64–**0**–63	This adjusts the blue level.
FREQUENCY	-128–**0**–127 (*4)	This adjusts the input frequency.
PHASE	-128–**0**–127 (*4)	This adjusts the phase.
EDID	**INTERNAL**, 800 x 600, 1024 x 768, 1200 x 800, 1366 x 768, 1280 x 1024, 1400 x 1050, 1600 x 1200, 1920 x 1200, 720p (*7), 1080i (*7), 1080p (*7)	This sets the input format (EDID) of the HDMI IN 6 connector or RGB/COMPONENT IN 6 connector.
STILL/BKG IN 7/8		
INPUT 7 ASSIGN	This assigns a still image or monochrome picture (background color) to channel 7.	
	STILL IMAGE 1	This selects the memory where a still image is saved and assigns the image. A "✻" symbol is displayed for memory where a still image is already saved.
	STILL IMAGE 2	
	BACKGROUND	This assigns a monochrome picture (background color).
INPUT 8 ASSIGN	This assigns a still image or monochrome picture (background color) to channel 8.	
	STILL IMAGE 1	This selects the memory where a still image is saved and assigns the image. A "✻" symbol is displayed for memory where a still image is already saved.
	STILL IMAGE 2	
	BACKGROUND	This assigns a monochrome picture (background color).
BACKGROUND COLOR	**BLACK**, WHITE, GRAY, RED, GREEN, BLUE, YELLOW	This sets the background color. * The background-color setting is shared by channels 7 and 8.

(*3) The settings on the HDMI/RGB IN 6 menu change in tandem with the assignment made using "INPUT 6 ASSIGN." You can make separate individual settings for the respective menu items for the HDMI IN 6 connector and the RGB/COMPONENT IN 6 connector.

(*4) This is effective when "INPUT 6 ASSIGN" is set to "RGB/COMPONENT."

(*5) The range of this value varies according to conditions such as the input/output format. The values listed above are the minimum and maximum values.

(*6) This is available when "SCALING TYPE" is set to "MANUAL."

(*7) Only when "INPUT 6 ASSIGN" is set to "HDMI."

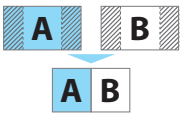
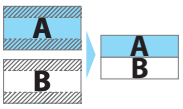
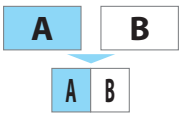
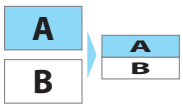
2: VIDEO OUTPUT

Menu item	Value (bold text: default value)	Explanation
SDI OUT 1, 2		
OUTPUT STATUS	—	This displays the video format. * When "HDCP" (p. 15) is set to "ON," "HDCP MASKED" is displayed and no video is output from the SDI OUT connectors.
OUTPUT ASSIGN	PGM, PVW, AUX The default values are as follows. SDI OUT 1: PGM SDI OUT 2: PVW	This sets the video bus assigned to the SDI OUT connectors.
3G-SDI MAPPING	LEVEL-A, **LEVEL-B**	This sets the mapping structure for 3G-SDI output.
H FLIP	**OFF**, ON	Setting this to "ON" flips the output video horizontally.
BRIGHTNESS	-64–**0**–63	This adjusts the brightness.
CONTRAST	-64–**0**–63	This adjusts the contrast.
SATURATION	-64–**0**–63	This adjusts the saturation.
HDMI OUT 1, 2		
OUTPUT STATUS	—	This displays information about the output video (video format and presence or absence of an HDCP signal). When no connection is in effect, "NOT CONNECTED" is displayed.
OUTPUT ASSIGN	PGM, PVW, AUX The default values are as follows. HDMI OUT 1: PGM HDMI OUT 2: PVW	This sets the vidoe bus assigned to the HDMI OUT connectors.
COLOR SPACE	**YCC**, RGB (0–255), RGB (16–235)	This sets the color space.
DVI-D/HDMI SIGNAL	DVI-D, **HDMI**	This sets the output mode for HDMI output.
H FLIP	**OFF**, ON	Setting this to "ON" flips the output video horizontally.
BRIGHTNESS	-64–**0**–63	This adjusts the brightness.
CONTRAST	-64–**0**–63	This adjusts the contrast.
SATURATION	-64–**0**–63	This adjusts the saturation.
RED	-64–**0**–63	This adjusts the red level.
GREEN	-64–**0**–63	This adjusts the green level.
BLUE	-64–**0**–63	This adjusts the blue level.
HDMI MULTI-VIEW		
OUTPUT STATUS	(1080/59.94p, 1080/50p)	This displays information about the output video (video format and presence or absence of an HDCP signal). When no connection is in effect, "NOT CONNECTED" is displayed. * The output format at the MULTI-VIEW connector is fixed at "1080p" and cannot be changed.
COLOR SPACE	**YCC**, RGB (0–255), RGB (16–235)	This sets the color space.
DVI-D/HDMI SIGNAL	DVI-D, **HDMI**	This sets the output mode for HDMI output.
BRIGHTNESS	-64–**0**–63	This adjusts the brightness.
CONTRAST	-64–**0**–63	This adjusts the contrast.
SATURATION	-64–**0**–63	This adjusts the saturation.
RED	-64–**0**–63	This adjusts the red level.
GREEN	-64–**0**–63	This adjusts the green level.
BLUE	-64–**0**–63	This adjusts the blue level.

3: TRANSITION

Menu item	Value (bold text: default value)	Explanation
TIME	0.0–**1.0**–4.0 sec	This sets the video transition time.
MIX TYPE	**MIX**, FAM, NAM	This specifies the transition pattern assigned to the [MIX] button.
WIPE 1 TYPE	H-DOWN, H-UP, V-RIGHT, V-LEFT, H-IN, H-OUT, V-IN, V-OUT, R-DOWN, L-DOWN, R-UP, L-UP, BLOCK, V-GRID, H-GRID, H-DOWN s, H-UP s, V-RIGHT s, V-LEFT s, H-IN s, H-OUT s, V-IN s, V-OUT s, R-DOWN s, L-DOWN s, R-UP s, L-UP s, BLOCK s, V-GRID s, H-GRID s	This specifies the wipe pattern assigned to the [WIPE 1] button. * Setting values indicated with "s" are soft edge wipe patterns.
WIPE 2 TYPE	The default values are as follows. WIPE 1 TYPE: V-RIGHT WIPE 2 TYPE: H-DOWN	This specifies the wipe pattern assigned to the [WIPE 2] button. * Setting values indicated with "s" are soft edge wipe patterns.

4: COMPOSITION

Menu item	Value (bold text: default value)	Explanation
PinP 1–2	These make settings such as the position and size of the inset screen for the individual [PinP 1] and [PinP 2] buttons.	
SIZE	1/4, **1/3**, 1/2	This sets the size of the inset screen. The horizontal width (and vertical height) of the inset screen are set to 1/2, 1/3, or 1/4 the size values of the background video.
POSITION H	-45.0–45.0% (*8) (*9) The default values are as follows. PinP 1: –25.0 PinP 2: 25.0	This adjusts the horizontal display position of the inset screen.
POSITION V	-40.0– **-25.0**–40.0% (*8) (*9)	This adjusts the vertical display position of the inset screen.
BORDER COLOR	BLACK, **WHITE**, GRAY, RED, GREEN, BLUE, YELLOW, SOFT EDGE	This sets the color of the border for the inset screen. Setting this to "SOFT EDGE" blurs the edge.
BORDER WIDTH	0–**1**–15	This adjusts the width of the border for the inset screen.
SHAPE	**SQUARE**, CIRCLE, HEART, DIAMOND	This specifies the shape of the inset screen.
ASPECT	**16:9**, 1:1	This sets the aspect ratio of the inset screen.
CROPPING H	-128–**0** (*10)	This adjusts the frame size in the horizontal direction.
CROPPING V	-128–**0** (*10)	This adjusts the frame size in the vertical direction.
VIEW POSITION H	-50.0–**0.0**–50.0% (*11)	This adjusts the display position of the video within the inset screen in the horizontal direction.
VIEW POSITION V	-50.0–**0.0**–50.0% (*11)	This adjusts the display position of the video within the inset screen in the vertical direction.
SPLIT		
PATTERN	This sets the split composition pattern assigned to the [SPLIT] button.	
	V-CENTER This vertically crops the center section of the video. 	H-CENTER This horizontally crops the center section of the video. 
	V-STRETCH This stretches the video vertically. 	H.STRETCH This stretches the video horizontally. 
PGM-CENTER	-25.0–**0.0**–25.0% (*12)	This is applied when "PATTERN" is set to "V-CENTER" or "H-CENTER." • When at V-CENTER This horizontally adjusts the display position of the video placed on the left side. • When at H-CENTER This vertically adjusts the display position of the video placed above.
PST-CENTER	-25.0–**0.0**–25.0% (*12)	This is applied when "PATTERN" is set to "V-CENTER" or "H-CENTER." • When at V-CENTER This horizontally adjusts the display position of the video placed on the right side. • When at H-CENTER This vertically adjusts the display position of the video placed below.
CENTER POSITION	-50.0–**0.0**–50.0% (*13)	You can change the size of the two videos by shifting the boundary line.

(*8) The range of this value varies according to conditions such as the input/output format. The values listed above are the minimum and maximum values.

(*9) When PinP compositing is turned on, the [H/PGM-CTR] and [V/PST-CTR] knobs respectively function as shortcuts for "POSITION H" and "POSITION V." Note, however, that adjusting to a decimal-fraction value is not possible when using the [H/PGM-CTR] and [V/PST-CTR] knobs.

(*10) When PinP compositing is turned on, holding down a cross-point button of the PST/B bus and turning the [H/PGM-CTR] knob acts as a shortcut for "CROPPING H." In the same way, holding down a cross-point button of the PST/B bus and turning the [V/PST-CTR] knob acts as a shortcut for "CROPPING V."

(*11) When PinP compositing is turned on, holding down a cross-point button of the PST/A bus and turning the [H/PGM-CTR] knob acts as a shortcut for "VIEW POSITION H." In the same way, holding down a cross-point button of the PST/A bus and turning the [V/PST-CTR] knob acts as a shortcut for "VIEW POSITION V."

(*12) When split compositing is turned on, the [H/PGM-CTR] and [V/PST-CTR] knobs respectively function as shortcuts for "PGM/CENTER" and "PST/CENTER." Note, however, that adjusting to a decimal-fraction value is not possible when using the [H/PGM-CTR] and [V/PST-CTR] knobs.

(*13) When split compositing is on, holding down a cross-point button of the PST/B bus and turning the [H/PGM-CTR] knob or [V/PST-CTR] knob acts as a shortcut for "CENTER POSITION." Note, however, that adjusting to a decimal-fraction value is not possible when using the [H/PGM-CTR] and [V/PST-CTR] knobs.

5: DSK

Menu item	Value (bold text: default value)	Explanation
DSK SOURCE CH	SDI IN 1–4, HDMI IN 5, **HDMI/RGB IN 6**, STILL/BKG IN 7, STILL/BKG IN 8	During DSK compositing, this specifies the channel of the overlaid logo or image. Setting this to "STILL/BKG IN 7" or "STILL/BKG IN 8" performs DSK composition using a still image saved in the unit.
KEY TYPE	This specifies the key type (extraction color) used during DSK composition.	
	LUMINANCE-WHITE	This uses a brightness threshold to make white transparent.
	LUMINANCE-BLACK	This uses a brightness threshold to make black transparent.
	CHROMA-GREEN	This uses a color threshold to make green transparent.
	CHROMA-BLUE	This uses a color threshold to make blue transparent.
KEY LEVEL	0–**64**–255	This adjusts the degree of extraction (transparency) for the key.
KEY GAIN	**0**–255	This adjusts the degree of edge blur (semi-transmissive region) for the key.
MIX LEVEL	0–**255**	This adjusts the key's overall density (output level).
HUE WIDTH	-128–**0**–127 (*14)	This adjusts the hue width for the key color.
HUE FINE	-128–**0**–127 (*14)	This adjusts the center position of the hue for the key color.
SATURATION WIDTH	-128–**0**–127 (*14)	This adjusts the saturation width for the key color.
SATURATION FINE	**0**–255 (*14)	This adjusts the center position of saturation for the key color.
PGM OUT	**OFF**, ON	This sets DSK composition on or off. When this is turned on, the results of DSK composition are sent to final output. * When the menu is used to turn on DSK composition, the video is composited immediately, regardless of the length of time set for video transitions.
PVW OUT	**OFF**, ON	Setting this to "ON" makes the DSK compositing results the preview output. * The [PVW] button functions as a shortcut for "PVW OUT."

(*14) This is applied when "KEY TYPE" is set to "CHROMA-GREEN" or "CHROMA-BLUE."

6: AUDIO INPUT

Menu item	Value (bold text: default value)	Explanation
AUDIO IN 1–4		
HEAD AMP GAIN	**0**–64dB	This adjusts head amp gain. Head amp gain adjusts analog audio.
DIGITAL GAIN	-42.0–**0.0**–42.0dB	This adjusts digital gain. Digital gain adjusts digital audio internally converted from analog to digital in the V-60HD.
INPUT LEVEL	**-INF**–10.0dB	This adjusts the volume level of input audio.
INPUT MUTE	**OFF**, ON	This sets the Mute feature on or off. Input audio for which this is set to "ON" is silenced.
PHANTOM +48V	**OFF**, ON	This sets phantom power on or off. When this is set to "ON," phantom power is supplied via the AUDIO IN jacks.
PAN	LEFT–**CENTER**–RIGHT	This adjusts the sound position (pan).
HPF 75Hz	**OFF**, ON	This sets the high-pass filter on or off. Effect This cuts off unneeded low-band audio. The cutoff frequency is 75 Hz.
DELAY	**0.0**–500ms (**0.0**–29.9/25.0frame)	This adjusts the delay time for input audio. Effect This outputs audio with a delay.
GATE	**OFF**, ON	This sets gate on or off. Effect This mutes audio that is below a specified level.
THRESHOLD	-80.0– **-50.0**–0.0dB	This sets the level used as the threshold for removing audio. Audio below the level set here is removed.
RELEASE	30–**860**–5000ms	This adjusts the length of time until the audio is fully attenuated after audio falls below the threshold.
COMP/LMT	**OFF**, ON	This sets the compressor on or off. Effect This compresses audio that exceeds a specified level.
THRESHOLD	-60.0– **-30.0**–0.0dB	This sets the level used as the threshold at which the compressor is applied. Compression is applied to audio that exceeds the threshold.
RATIO	1.00:1, 1.12:1, 1.25:1, 1.40:1, 1.60:1, 1.80:1, 2.00:1, 2.50:1, 3.20:1, 4.00:1, **5.60:1**, 8.00:1, 16.0:1, INF:1	This species the degree of compression applied to the audio. The state in which no compression is applied is defined as "1."
ATTACK	0.2–**1**–100ms	This sets the time until compression starts when audio exceeding the threshold is input.
RELEASE	30–**380**–5000ms	This adjusts the length of time until compression ends after audio falls below the threshold.
AUTO GAIN	OFF, **ON**	This switches the auto makeup gain feature on and off. When this is set to "ON," the final output volume level after applying the compressor is automatically adjusted according to the "THRESHOLD" and "RATIO" settings. The total of the "MAKEUP GAIN" setting value described below and the value calculated by auto makeup gain becomes the final output volume level (up to +34 dB).
MAKEUP GAIN	-40–**0.0**–40dB	This adjusts the final output volume level after applying the compressor.

Menu item	Value (bold text: default value)	Explanation
EQUALIZER	**OFF**, ON	This sets the equalizer on or off. Effect Adjusts the sound quality for each frequency band.
EQ Hi	-15.0–**0.0**–15.0dB	This boosts or attenuates the high band.
EQ Hi FREQ	1.00–**10.0**–20.0kHz	This adjusts the center frequency when changing the tone quality in the high band.
EQ Mid	-15.0–**0.0**–15.0dB	This boosts or attenuates the middle band.
EQ Mid FREQ	20.0Hz–**500Hz**–20.0kHz	This adjusts the center frequency when changing the tone quality in the middle band.
EQ Mid Q	0.5–**1.0**–16.0	This adjusts the width of the frequency band when boosting or attenuating the middle band.
EQ Lo	-15.0–**0.0**–15.0dB	This boosts or attenuates the low band.
EQ Lo FREQ	20.0–**100**–500Hz	This adjusts the center frequency when changing the tone quality in the low band.
SOLO	**OFF**, ON	This turns the solo function on/off. Only the input audio for which this is "ON" is monitored through the headphones.
EFFECT PRESET	This sets an effect preset (high-pass filter, gate, equalizer). * When you change a preset, the settings of each effect are overwritten.	
	DEFAULT	For line input (default setting)
	MEETING	For meetings
	INTERVIEW	For interviews
	AMBIENT MIC	For capturing ambient sound
	WINDY FIELD	For capturing ambient sound in a windy area
	DE-ESS & POPS SOFT	For reducing sibilants
	DE-ESS & POPS HARD	For reducing plosives
AUDIO IN 5/6		
DIGITAL GAIN	-42.0–**0.0**–42.0dB	This adjusts digital gain.
INPUT LEVEL	**-INF**–10.0dB	This adjusts the volume level of input audio.
INPUT MUTE	**OFF**, ON	This sets the Mute feature on or off. Input audio for which this is set to "ON" is silenced.
HPF 75Hz	**OFF**, ON	This sets the high-pass filter on or off. Effect This cuts off unneeded low-band audio. The cutoff frequency is 75 Hz.
DELAY	**0.0**–500ms (**0.0**–29.9/25.0frame)	This adjusts the delay time for input audio. Effect This outputs audio with a delay.
GATE	**OFF**, ON	This sets gate on or off. Effect This mutes audio that is below a specified level.
THRESHOLD	-80.0– **-50.0**–0.0dB	This sets the level used as the threshold for removing audio. Audio below the level set here is removed.
RELEASE	30–**860**–5000ms	This adjusts the length of time until the audio is fully attenuated after audio falls below the threshold.
COMP/LMT	**OFF**, ON	This sets the compressor on or off. Effect This compresses audio that exceeds a specified level.
THRESHOLD	-60.0– **-30.0**–0.0dB	This sets the level used as the threshold at which the compressor is applied. Compression is applied to audio that exceeds the threshold.
RATIO	1.00:1, 1.12:1, 1.25:1, 1.40:1, 1.60:1, 1.80:1, 2.00:1, 2.50:1, 3.20:1, 4.00:1, **5.60:1**, 8.00:1, 16.0:1, INF:1	This species the degree of compression applied to the audio. The state in which no compression is applied is defined as "1."
ATTACK	0.2–**1**–100ms	This sets the time until compression starts when audio exceeding the threshold is input.
RELEASE	30–**380**–5000ms	This adjusts the length of time until compression ends after audio falls below the threshold.
AUTO GAIN	OFF, **ON**	This switches the auto makeup gain feature on and off. When this is set to "ON," the final output volume level after applying the compressor is automatically adjusted according to the "THRESHOLD" and "RATIO" settings. The total of the "MAKEUP GAIN" setting value described below and the value calculated by auto makeup gain becomes the final output volume level (up to +34 dB).
MAKEUP GAIN	-40–**0.0**–40dB	This adjusts the final output volume level after applying the compressor.
EQUALIZER	**OFF**, ON	This sets the equalizer on or off. Effect Adjusts the sound quality for each frequency band.
EQ Hi	-15.0–**0.0**–15.0dB	This boosts or attenuates the high band.
EQ Hi FREQ	1.00–**10.0**–20.0kHz	This adjusts the center frequency when changing the tone quality in the high band.
EQ Mid	-15.0–**0.0**–15.0dB	This boosts or attenuates the middle band.
EQ Mid FREQ	20.0Hz–**500Hz**–20.0kHz	This adjusts the center frequency when changing the tone quality in the middle band.
EQ Mid Q	0.5–**1.0**–16.0	This adjusts the width of the frequency band when boosting or attenuating the middle band.
EQ Lo	-15.0–**0.0**–15.0dB	This boosts or attenuates the low band.
EQ Lo FREQ	20.0–**100**–500Hz	This adjusts the center frequency when changing the tone quality in the low band.

Menu item	Value (bold text: default value)	Explanation
SOLO	**OFF**, ON	This turns the solo function on/off. Only the input audio for which this is "ON" is monitored through the headphones.
EFFECT PRESET	This sets an effect preset (high-pass filter, gate, equalizer). * When you change a preset, the settings of each effect are overwritten.	
	DEFAULT	For line input (default setting)
	MEETING	For meetings
	INTERVIEW	For interviews
	AMBIENT MIC	For capturing ambient sound
	WINDY FIELD	For capturing ambient sound in a windy area
	DE-ESS & POPS SOFT	For reducing sibilants
	DE-ESS & POPS HARD	For reducing plosives
SDI IN 1–4, HDMI IN 5, HDMI IN 6		
DIGITAL GAIN	-42.0–**0.0**–42.0dB	This adjusts digital gain.
INPUT LEVEL	-INF–**0.0**–10.0dB	This adjusts the volume level of SDI or HDMI audio.
INPUT MUTE	**OFF**, ON	This sets the Mute feature on or off. SDI or HDMI audio for which this is set to "ON" is silenced.
HPF 75Hz	**OFF**, ON	This sets the high-pass filter on or off. Effect This cuts off unneeded low-band audio. The cutoff frequency is 75 Hz.
DELAY	**0.0**–500ms (**0.0**–29.9/25.0frame)	This adjusts the delay time for SDI or HDMI audio. Effect This outputs audio with a delay.
GATE	**OFF**, ON	This sets gate on or off. Effect This mutes audio that is below a specified level.
THRESHOLD	-80.0– **-50.0**–0.0dB	This sets the level used as the threshold for removing audio. Audio below the level set here is removed.
RELEASE	30–**860**–5000ms	This adjusts the length of time until the audio is fully attenuated after audio falls below the threshold.
COMP/LMT	**OFF**, ON	This sets the compressor on or off. Effect This compresses audio that exceeds a specified level.
THRESHOLD	-60.0– **-30.0**–0.0dB	This sets the level used as the threshold at which the compressor is applied. Compression is applied to audio that exceeds the threshold.
RATIO	1.00:1, 1.12:1, 1.25:1, 1.40:1, 1.60:1, 1.80:1, 2.00:1, 2.50:1, 3.20:1, 4.00:1, **5.60:1**, 8.00:1, 16.0:1, INF:1	This species the degree of compression applied to the audio. The state in which no compression is applied is defined as "1."
ATTACK	0.2–**1**–100ms	This sets the time until compression starts when audio exceeding the threshold is input.
RELEASE	30–**380**–5000ms	This adjusts the length of time until compression ends after audio falls below the threshold.
AUTO GAIN	OFF, **ON**	This switches the auto makeup gain feature on and off. When this is set to "ON," the final output volume level after applying the compressor is automatically adjusted according to the "THRESHOLD" and "RATIO" settings. The total of the "MAKEUP GAIN" setting value described below and the value calculated by auto makeup gain becomes the final output volume level (up to +34 dB).
MAKEUP GAIN	-40–**0.0**–40dB	This adjusts the final output volume level after applying the compressor.
EQUALIZER	**OFF**, ON	This sets the equalizer on or off. Effect Adjusts the sound quality for each frequency band.
EQ Hi	-15.0–**0.0**–15.0dB	This boosts or attenuates the high band.
EQ Hi FREQ	1.00–**10.0**–20.0kHz	This adjusts the center frequency when changing the tone quality in the high band.
EQ Mid	-15.0–**0.0**–15.0dB	This boosts or attenuates the middle band.
EQ Mid FREQ	20.0Hz–**500Hz**–20.0kHz	This adjusts the center frequency when changing the tone quality in the middle band.
EQ Mid Q	0.5–**1.0**–16.0	This adjusts the width of the frequency band when boosting or attenuating the middle band.
EQ Lo	-15.0–**0.0**–15.0dB	This boosts or attenuates the low band.
EQ Lo FREQ	20.0–**100**–500Hz	This adjusts the center frequency when changing the tone quality in the low band.
SOLO	**OFF**, ON	This turns the solo function on/off. Only the input audio for which this is "ON" is monitored through the headphones.
EFFECT PRESET	This sets an effect preset (high-pass filter, gate, equalizer). * When you change a preset, the settings of each effect are overwritten.	
	DEFAULT	For line input (default setting)
	MEETING	For meetings
	INTERVIEW	For interviews
	AMBIENT MIC	For capturing ambient sound
	WINDY FIELD	For capturing ambient sound in a windy area
	DE-ESS & POPS SOFT	For reducing sibilants
	DE-ESS & POPS HARD	For reducing plosives

7: AUDIO OUTPUT

<table>
<tr><th>Menu item</th><th>Value (bold text: default value)</th><th>Explanation</th></tr>
<tr><td colspan="3">OUTPUT ASSIGN</td></tr>
<tr><td rowspan="3">AUDIO OUT (XLR)</td><td colspan="2">This specifies the audio bus assigned to the AUDIO OUT connectors (XLR).</td></tr>
<tr><td>MASTER OUTPUT</td><td>This groups together all input audio and outputs it (master out).</td></tr>
<tr><td>AUX</td><td>This outputs only the audio on the AUX bus.</td></tr>
<tr><td rowspan="3">AUDIO OUT (RCA)</td><td colspan="2">This specifies the audio bus assigned to the AUDIO OUT connectors (RCA).</td></tr>
<tr><td>MASTER OUTPUT</td><td>This groups together all input audio and outputs it (master out).</td></tr>
<tr><td>AUX</td><td>This outputs only the audio on the AUX bus.</td></tr>
<tr><td rowspan="3">PHONES OUT</td><td colspan="2">This specifies the audio bus assigned to the PHONES jack.</td></tr>
<tr><td>MASTER OUTPUT</td><td>This groups together all input audio and outputs it (master out).</td></tr>
<tr><td>AUX</td><td>This outputs only the audio on the AUX bus.</td></tr>
<tr><td rowspan="3">SDI OUT 1, 2</td><td colspan="2">This specifies the audio bus that is assigned to the SDI OUT 1 or 2 connector.</td></tr>
<tr><td>AUTO</td><td>When you change the video bus assignment, the audio that is output also changes accordingly.<table><tr><th>Video bus</th><th>Output audio</th></tr><tr><td>PGM</td><td rowspan="2">This groups together all input audio and outputs it (master out).</td></tr><tr><td>PVW</td></tr><tr><td>AUX</td><td>This outputs only the audio on the AUX bus.</td></tr></table></td></tr>
<tr><td>MASTER OUTPUT</td><td>This groups together all input audio and outputs it (master out).</td></tr>
<tr><td rowspan="4">HDMI OUT 1, 2</td><td colspan="2">This specifies the audio bus that is assigned to the HDMI OUT 1 or 2 connector.</td></tr>
<tr><td>AUTO</td><td>When you change the video bus assignment, the audio that is output also changes accordingly.<table><tr><th>Video bus</th><th>Output audio</th></tr><tr><td>PGM</td><td rowspan="2">This groups together all input audio and outputs it (master out).</td></tr><tr><td>PVW</td></tr><tr><td>AUX</td><td>This outputs only the audio on the AUX bus.</td></tr></table></td></tr>
<tr><td>MASTER OUTPUT</td><td>This groups together all input audio and outputs it (master out).</td></tr>
<tr><td>AUX</td><td>This outputs only the audio on the AUX bus.</td></tr>
<tr><td colspan="3">MASTER OUTPUT</td></tr>
<tr><td>OUTPUT LEVEL</td><td>-INF–10.0dB</td><td>This adjusts the volume level for master out.</td></tr>
<tr><td>OUTPUT MUTE</td><td>OFF, ON</td><td>This sets the Mute feature on or off. Setting this to “ON” mutes master out.</td></tr>
<tr><td>EQUALIZER</td><td>OFF, ON</td><td>This sets the equalizer on or off.
Effect Adjusts the sound quality for each frequency band.</td></tr>
<tr><td>EQ Hi</td><td>-15.0–0.0–15.0dB</td><td>This boosts or attenuates the high band.</td></tr>
<tr><td>EQ Hi FREQ</td><td>1.00–10.0–20.0kHz</td><td>This adjusts the center frequency when changing the tone quality in the high band.</td></tr>
<tr><td>EQ Mid</td><td>-15.0–0.0–15.0dB</td><td>This boosts or attenuates the middle band.</td></tr>
<tr><td>EQ Mid FREQ</td><td>20.0Hz–500Hz–20.0kHz</td><td>This adjusts the center frequency when changing the tone quality in the middle band.</td></tr>
<tr><td>EQ Mid Q</td><td>0.5–1.0–16.0</td><td>This adjusts the width of the frequency band when boosting or attenuating the middle band.</td></tr>
<tr><td>EQ Lo</td><td>-15.0–0.0–15.0dB</td><td>This boosts or attenuates the low band.</td></tr>
<tr><td>EQ Lo FREQ</td><td>20.0–100–500Hz</td><td>This adjusts the center frequency when changing the tone quality in the low band.</td></tr>
<tr><td>MULTI BAND COMP</td><td>OFF, ON</td><td>This switches the multi-band compressor on and off.
Effect This applies separate compressors in individual frequency bands.</td></tr>
<tr><td>Hi THRESHOLD</td><td>-40.0– -20.0–0.0dB</td><td rowspan="3">These set the individual levels that become the thresholds for the high, midrange, and low bands at which the compressor is applied. Compression is applied to audio that exceeds the threshold.</td></tr>
<tr><td>Mid THRESHOLD</td><td>-40.0– -16.0–0.0dB</td></tr>
<tr><td>Lo THRESHOLD</td><td>-40.0– -20.0–0.0dB</td></tr>
<tr><td>Hi RATIO</td><td rowspan="3">1.00:1, 1.12:1, 1.25:1, 1.40:1, 1.60:1, 1.80:1, 2.00:1, 2.50:1, 3.20:1, 4.00:1, 5.60:1, 8.00:1, 16.0:1, INF:1

The default values are as follows.
Hi RATIO: 3.20:1
Mid RATIO: 2.50:1
Lo RATIO: 3.20:1</td><td rowspan="3">These set the amount of compression applied in the high, midrange, and low bands. The state in which no compression is applied is defined as “1.”</td></tr>
<tr><td>Mid RATIO</td></tr>
<tr><td>Lo RATIO</td></tr>
<tr><td>LIMITER</td><td>OFF, ON</td><td>This sets the limiter on or off.
Effect This limits the output volume so that is does not exceed the set level.</td></tr>
<tr><td>THRESHOLD</td><td>-40.0– -6.0–0.0dB</td><td>This sets the level that becomes the threshold at which the limiter is applied. Compression is applied to audio that exceeds the threshold. The volume level of audio that is output is limited so as to stay to below the threshold.</td></tr>
</table>

Menu item	Value (bold text: default value)	Explanation
AUX		
AUX LEVEL	-INF–**0.0**–10.0dB	This adjusts the volume level of audio on the AUX bus.
AUX MUTE	**OFF**, ON	This sets the Mute feature on or off. Setting this to "ON" mutes the AUX-bus audio.
AUX DELAY	**0.0**–500ms (**0.0**–29.9/25.0frame)	This adjusts the delay time of audio on the AUX bus. Effect This outputs audio with a delay.
LIMITER	**OFF**, ON	This sets the limiter on or off. Effect This limits the output volume so that is does not exceed the set level.
THRESHOLD	-40.0– **-6.0**–0.0dB	This sets the level that becomes the threshold at which the limiter is applied. Compression is applied to audio that exceeds the threshold. The volume level of audio that is output is limited so as to stay to below the threshold.
SEND SDI/HDMI IN	Selects how to configure the amount of signal sent to the AUX bus for SDI IN or HDMI IN.	
	AUTO	Audio is automatically sent to the AUX bus in tandem with the AUX bus video selection.
	MANUAL	The amount of audio to send is adjusted manually.
SEND AUDIO IN 1–5/6 **SEND SDI IN 1–4** (*15) **SEND HDMI IN 5, 6** (*15)	**-INF**–0dB	Adjusts the amount of audio sent to the AUX bus for each input.
EFFECT AUDIO IN 1–5/6 **EFFECT SDI IN 1–4** **EFFECT HDMI IN 5, 6**	This specifies the type of audio that is sent from each input to the AUX bus.	
	DRY	Sends the source audio with no effects applied.
	PRE FADER	Sends the effect-applied audio. The send volume is constant, regardless of the volume (INPUT LEVEL).
	POST FADER	Sends the effect-applied audio. The send volume can be changed by adjusting the volume (INPUT LEVEL).

(*15) This can be set if "SEND SDI/HDMI IN" is "MANUAL."

8: AUDIO FOLLOW

Menu item	Value (bold text: default value)	Explanation
SDI IN 1–4 **HDMI IN 5, 6**	**OFF**, ON	This switches the Audio Follow feature on or off. Video channels for which this is set to "ON" are automatically muted when video on another channel is output.
AUDIO IN 1–5/6	**OFF**, SDI IN 1–4, HDMI IN 5, HDMI/RGB IN 6, STILL/BKG IN 7, STILL/BKG IN 8	This sets the video channel to interlink with input audio using Audio Follow. Audio from AUDIO IN 1–5/6 is muted out for video channels other than what you specified. When this is set to "OFF," no video channels using Audio Follow are assigned.

9: AUDIO EMBEDDED

Menu item	Value (bold text: default value)	Explanation
AUDIO IN 1–5/6	This specifies the type of input audio sent to the SDI embedded-audio channels (3–8). (*16)	
	OFF	No audio is sent.
	DRY	Sends the source audio with no effects applied.
	PRE FADER	Sends the effect-applied audio. The send volume is constant, regardless of the volume (INPUT LEVEL).
	POST FADER	Sends the effect-applied audio. The send volume can be changed by adjusting the volume (INPUT LEVEL).
SDI OUT 1 AUDIO	**CH1–2**, CH1–8	This specifies the embedded-audio channel that is output via the SDI OUT 1 connector.
SDI OUT 2 AUDIO	**CH1–2**, CH1–8	This specifies the embedded-audio channel that is output via the SDI OUT 2 connector.

(*16) The audio shown below is assigned to the respective channels of SDI embedded audio.

SDI embedded-audio channel number	Assigned audio
Channel 1	Master out (L) or AUX bus (L)
Channel 2	Master out (R) or AUX bus (R)
Channel 3	AUDIO IN 1
Channel 4	AUDIO IN 2

SDI embedded-audio channel number	Assigned audio
Channel 5	AUDIO IN 3
Channel 6	AUDIO IN 4
Channel 7	AUDIO IN 5 (L)
Channel 8	AUDIO IN 6 (R)

10: AUDIO AUTO MIXING

Menu item	Value (bold text: default value)	Explanation
AUTO MIXING	**OFF**, ON	This switches the Auto Mixing feature on or off.
AUDIO IN 1–5/6 **SDI IN 1–4** **HDMI 5, 6**	**OFF**, ON	This specifies whether Auto Mixing is applied (ON) or not applied (OFF).
WEIGHT	0–**100%**	This sets the priority for volume-level distribution.

11: PRESET MEMORY

Menu item	Value (bold text: default value)	Explanation
LOAD (*17)	**MEMORY 1**–8	This selects the preset memory to load. Pressing the [VALUE] knob lets you load the preset memory.
SAVE (*17)	**MEMORY 1**–8	This selects a preset memory for saving settings. Pressing the [VALUE] knob lets you save the settings to the preset memory. * The state of the [OUTPUT FADE] button and [PHONES] knob are not saved to any preset memory. The [OUTPUT FADE] button is always dark at startup. * The state of the [MODE] button and the settings shown below are saved as global settings for the unit. They are not saved to preset memories.
DELETE	**MEMORY 1**–8	This selects a preset memory to delete. Pressing the [VALUE] knob lets you delete the preset memory.
START UP	This specifies the settings loaded at startup.	
	LAST MEMORY	This restores the state that was in effect immediately before the power was turned off (Last Memory feature). The current settings (Last Memory values) are saved every 4 seconds, and when you exit a menu.
	MEMORY 1–8	These recall the settings at the selected memory number.
MEMORY PROTECT	**OFF**, ON	When this is set to "ON," the preset memories are protected, and settings cannot be saved to them.
MEMORY LOAD FADE	OFF, **ON**	If this is "ON," fade-to-black is applied when you recall a preset memory. If this is "OFF," fade-to-black is not applied when you recall a preset memory. However, the screen might be disordered depending on the values of the settings that are recalled.

Category	Setting items saved in the unit
RS-232/GPI	All menu items
LAN CONTROL	
SYSTEM	All setting items except "TEST PATTERN" and "TEST TONE" * "TEST PATTERN" and "TEST TONE" are always set to "OFF" at startup.

(*17) When the [MODE] button is lighted in blue, the AUX/MEMORY buttons function as shortcuts for saving to and loading preset memories.

12: RS-232/GPI

Menu item	Value (bold text: default value)	Explanation
RS-232	OFF, **ON**	Setting this to "ON" makes it possible to send and receive RS-232 commands.
BAUDRATE	9600, **38400**	This sets the communication speed (bps) of the RS-232 connector.
PANEL INFORMATION	**OFF**, ON	When this is set to "ON," the RS-232 command QPL (7: ALL) is always transmitted, such as when the channel is switched or when the PGM/A bus and PST/B bus are switched (p. 23).
GPI 1–8 TYPE	This sets the function assigned to the GPI channel. * When a control signal is input from an external source, the assigned function is executed. The GPI trigger is fixed at the trailing edge (low: ON). For details, refer to "Inputting a Control Signal" (p. 19).	
	N/A	No function is assigned.
	PGM CH SEL 1–8	This switches the final output video.
	PST CH SEL 1–8	This switches the preset video (the video to be output next).
	MEMORY LOAD 1–8	This loads a preset memory.
	DSK SRC SEL 1–8	During DSK compositing, this switches the channel of the overlaid logo or image.
	MUTE AUDIO IN 1–5/6	This turns the input audio mute function on/off.
	MUTE SDI IN 1–4	
	MUTE HDMI IN 5–6	
	SOLO AUDIO IN 1–5/6	This turns the input audio solo function on/off.
	SOLO SDI IN 1–4	
	SOLO HDMI IN 5, 6	
	DSK SW	This performs the same operation as pressing the [DSK] button.
	AUTO SW	This performs the same operation as pressing the [AUTO] button.
	CUT SW	This performs the same operation as pressing the [CUT] button.
	OUTPUT FADE SW	This performs the same operation as pressing the [OUTPUT FADE] button.
	AUTO MIXING SW	This performs the same operation as pressing the [AUTO MIXING] button.

13: CAMERA CONTROL

Menu item	Value (bold text: default value)	Explanation
CAMERA ID	**CAMERA 1**–6	This selects the camera to be controlled.
PROTOCOL	**N/A**, JVC, Panasonic, Canon, VISCA over IP, PTZOptics, Avonic	This sets the camera's protocol.
CAMERA IP ADDRESS	CAMERA 1: **192.168.2.101** CAMERA 2: **192.168.2.102** CAMERA 3: **192.168.2.103** CAMERA 4 :**192.168.2.104** CAMERA 5: **192.168.2.105** CAMERA 6: **192.168.2.106**	Input the camera's IP address.
When PROTOCOL = JVC, Panasonic, VISCA over IP, PTZOptics, or Avonic (p. 18)		
LOGIN NAME	(ENTER)	The LOGIN NAME screen appears. Enter the log-in name needed to connect with the camera when "PROTOCOL" is "JVC."
PASSWORD	(ENTER)	The PASSWORD screen appears. Enter the password needed to connect with the camera when "PROTOCOL" is "JVC."
PAN	This adjusts the horizontal position of the camera. When the cursor is located at this value, you can control the camera.	
	LEFT	While you hold down the [VALUE] button, the camera faces left.
	RIGHT	While you hold down the [VALUE] button, the camera faces right.
TILT	This adjusts the vertical position of the camera. When the cursor is located at this value, you can control the camera.	
	DOWN	While you hold down the [VALUE] button, the camera faces up.
	UP	While you hold down the [VALUE] button, the camera faces down.
PAN/TILT SPEED	1–**12**–24	Adjusts the speed at which the camera changes direction.
ZOOM	This adjusts the camera's zoom position. When the cursor is located at this value, you can control the camera.	
	WIDE (FAST)	While you hold down the [VALUE] button, the camera zooms-out at high speed.
	WIDE (SLOW)	While you hold down the [VALUE] button, the camera zooms-out at low speed.
	TELE (SLOW)	While you hold down the [VALUE] button, the camera zooms-in at low speed.
	TELE (FAST)	While you hold down the [VALUE] button, the camera zooms-in at high speed.
FOCUS	This adjusts the focal point of the camera. When the cursor is located at this value, you can control the camera.	
	FAR	While you hold down the [VALUE] button, the focal point moves farther away.
	NEAR	While you hold down the [VALUE] button, the focus moves closer.
AUTO FOCUS	**OFF**, ON	When this is set to "ON," the focal point is set automatically.
EXPOSURE	**AUTO**, MANUAL	This sets the exposure mode.
TALLY CH	**CH1**–6	This specifies the channel that is inputting the camera video. When the camera video from the V-60HD is the final output, the camera's tally light is lit.
CAMERA PRESET RECALL	**PRESET 1**–8	This selects a preset in which camera settings are preset. By pressing the [VALUE] knob you can recall a preset from the camera.
ALL CAMERAS RECALL (*18)	This specifies how presets are recalled.	
	OFF	Recall presets from the camera that is being controlled.
	ON	Simultaneously recall presets from all cameras (CAMERA 1–6).
CAMERA PRESET STORE	**PRESET 1**–8	This selects the preset in which camera settings will be registered. By pressing the [VALUE] knob you can register the camera settings to a preset. * Presets are saved in the camera itself.

(*18) When the [MODE] button is illuminated in light blue, the AUX/MEMORY buttons function as shortcuts for recalling presets.

Menu item	Value (bold text: default value)	Explanation
When PROTOCOL = Canon (p. 17)		
SD CARD SLOT	**SD CARD A**, SD CARD B	This specifies the SD card slot to use.
REC STATUS	—	This indicates the video recording status.
REMAINING TIME	—	This indicates the remaining available recording time.
WHITE BALANCE	**AUTO WHITE BALANCE**, DAYLIGHT, TUNGSTEN, PRESET 1, PRESET 2, COLOR TEMPERATURE	This specifies the white balance type.
TEMPERATURE	**2000**–15000K (*19)	This specifies the color temperature.
PRESET SET	(EXEC) (*20)	When you press the [VALUE] knob, the subject shown by the camera is captured as the reference white color.
ZOOM	This adjusts the camera's zoom position. When the cursor is located at this value, you can control the camera.	
	WIDE	While you hold down the [VALUE] button, the camera zooms-out.
	TELE	While you hold down the [VALUE] button, the camera zooms-in.
ZOOM POSITION	**1**–6	Adjusts the zoom position in the six levels of 1 (WIDE)–6 (TELE).
FOCUS	This adjusts the focal point of the camera. When the cursor is located at this value, you can control the camera.	
	FAR	While you hold down the [VALUE] button, the focal point moves farther away.
	NEAR	While you hold down the [VALUE] button, the focus moves closer.
AUTO FOCUS	**OFF,** ON	When this is set to "ON," the focal point is set automatically.
FOCUS GUIDE	**OFF,** ON	If this is "ON," a focus guide is shown.
EXPOSURE	**AUTO,** Tv, Av, MANUAL	This sets the exposure mode.
ND	(*21)	This specifies the type of ND filter.
IRIS	(*21)	This adjusts the aperture value.
SHUTTER	(*21)	This adjusts the shutter speed.
GAIN	(*21)	This adjusts the gain.
AE SHIFT	(*21)	This adjusts the amount of exposure compensation when using auto exposure.

(*19) This is available when "WHITE BALANCE" is set to "COLOR TEMPERATURE."
(*20) This is available when "WHITE BALANCE" is set to "PRESET 1" or "PRESET 2."
(*21) The values depend on the camera you're using.

14: LAN CONTROL

Menu item	Value (bold text: default value)	Explanation
CONFIGURE	MANUALLY, **USING DHCP**	This sets whether the IP address and subnet mask are obtained automatically (USING DHCP) or set manually (MANUALLY).
IP ADDRESS	**192.168.2.254** (*22)	This sets the IP address.
SUBNET MASK	**255.255.255.0** (*22)	This sets the subnet mask.
INFORMATION	(ENTER)	The LAN INFORMATION screen appears.

Indication	Explanation
STATUS	This displays the connection status.
IP ADDRESS	This displays the IP address.
SUBNET MASK	This displays the subnet mask.
MAC ADDRESS	This displays the MAC address.
(QR code) (*23)	This displays the URL of the IP address as a QR code.

(*22) This is available when "CONFIGURE" is set to "MANUALLY."
(*23) QR Code is a registered trademark of DENSO WAVE INCORPORATED in Japan and in other countries.

15: USB MEMORY

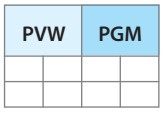
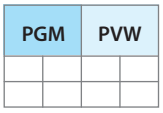
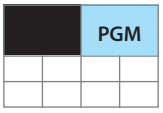
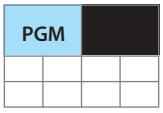
Menu item	Value (bold text: default value)	Explanation
LOAD PRESET	(ENTER)	The USB LOAD screen appears. This loads a settings file (.V06) that is on the USB flash drive into the unit.
SAVE PRESET	(ENTER)	The USB SAVE screen appears. This saves settings, overwriting the selected settings file (.V06) on the USB flash drive.
SAVE AS PRESET	(ENTER)	The USB SAVE AS screen appears. This newly saves the unit's settings to the USB flash drive as a single file (.V06). * Any still images that have been imported into the unit are not saved in the file.
LOAD STILL IMAGE	**STILL IMAGE 1** STILL IMAGE 2	When you are importing a still image that is on a USB flash drive, this specifies the memory to use as the destination for saving the image on the unit. Pressing the [VALUE] knob lets you import the still image. * A "✻" symbol is displayed for memory where a still image is already saved. **File format of the still images that can be loaded** **Format**: Bitmap file (.bmp), 24-bit color, uncompressed / PNG file (.png), 24-bit color * Alpha channel is not supported. / JPG file (.jpg), 24-bit color **Resolution**: In conformity with system format **File name**: Up to eight single-byte alphanumeric characters * The extension ".bmp," ".png," or ".jpg" must be added.
SAVE STILL IMAGE	**STILL IMAGE 1** STILL IMAGE 2	Press the [VALUE] knob to access the SAVE STILL IMAGE screen. The still image captured from the input/output video is exported to a USB flash drive. * A "✻" symbol is displayed for memory where a still image is saved. * The file formats of the still images that can be saved are the same as in "File format of the still images that can be loaded," above.
FORMAT	(EXEC)	This formats the USB flash drive.

16: CAPTURE IMAGE

Menu item	Value (bold text: default value)	Explanation
CAPTURE SOURCE	**SDI IN 1**–4, HDMI IN 5, HDMI/RGB IN 6, PROGRAM OUT	This specifies the input/output video to use for still-image capture.
TARGET STORAGE NO	**STILL IMAGE 1**, STILL IMAGE 2	This selects the memory to use as the destination for saving the captured still image. * A "✻" symbol is displayed for memory where a still image is already saved.
CAPTURE EXECUTE	(EXEC)	This captures a still image.
CAPTURE SHORTCUT	**DISABLE,** ENABLE	Enables (ENABLE) or disables (DISABLE) still image capture by button operations. If this is set to "ENABLE," you can capture a still image by long-pressing a cross-point [1]–[6] button. **Save-destination for still image** Operate a PGM/A bus cross-point button: STILL IMAGE 1 Operate a PST/B bus cross-point button: STILL IMAGE 2

17: SYSTEM

<table>
<tr><th>Menu item</th><th>Value (bold text: default value)</th><th>Explanation</th></tr>
<tr><td>HDCP</td><td>OFF, ON</td><td>This specifies whether HDCP is enabled (ON) or disabled (OFF). When set to “ON,” copyright-protected (HDCP) video can be input. HDCP is also added to the video that is output.
* When “HDCP” is set to “ON,” no video is output via the SDI OUT connectors.</td></tr>
<tr><td>FRAME RATE</td><td>59.94Hz, 50Hz</td><td>This sets the frame rate.</td></tr>
<tr><td>SYSTEM FORMAT</td><td>720p, 1080i, 1080p</td><td>This specifies the system format for the V-60HD. The input and output formats of the respective connectors are determined according to the system format, as shown in the table below.
<table>
<tr><th rowspan="2">System format</th><th>Input format</th><th>Output format</th></tr>
<tr><th>SDI IN 1–4 connectors</th><th>SDI OUT 1 and 2 connectors
HDMI OUT 1 and 2 connectors</th></tr>
<tr><td>1080p</td><td>1080p, 1080i</td><td>1080p</td></tr>
<tr><td>1080i</td><td>1080p, 1080i</td><td>1080i</td></tr>
<tr><td>720p</td><td>720p</td><td>720p</td></tr>
</table>
• The input format of the HDMI IN 5 connector is set independently by the “EDID” value for “HDMI IN 5” (p. 3), regardless of the system format.
• The input format of the HDMI IN 6 connector or RGB/COMPONENT IN 6 connector is set independently by the “EDID” value for “HDMI/RGB IN 6” (p. 4), regardless of the system format.
• The output format at the MULTI-VIEW connector is fixed at “1080p” and cannot be changed.</td></tr>
<tr><td>PANEL OPERATION</td><td>PGM/PST, A/B</td><td>This sets the operation mode for video transitions.</td></tr>
<tr><td rowspan="2">PANEL LOCK</td><td>(ENTER)</td><td>The PANEL LOCK menu items shown.</td></tr>
<tr><td colspan="2">These specify whether panel lock is applied (ON) or not applied (OFF) for each individual button and knob.
<table>
<tr><th>Menu item</th><th>Value</th><th>Explanation</th></tr>
<tr><td>ALL SW & VOLUME</td><td>OFF, ON</td><td>All buttons and knobs</td></tr>
<tr><td>MENU SW + EXIT SW</td><td>OFF, ON</td><td>[MENU] [EXIT] buttons</td></tr>
<tr><td>VALUE ENCODER</td><td>OFF, ON</td><td>[VALUE] knob</td></tr>
<tr><td>PGM/A 1–8 SW</td><td>OFF, ON</td><td>PGM/A bus cross-point [1]–[8] buttons</td></tr>
<tr><td>PST/B 1–8 SW</td><td>OFF, ON</td><td>PST/B bus cross-point [1]–[8] buttons</td></tr>
<tr><td>AUX/MEMORY 1–8 SW</td><td>OFF, ON</td><td>AUX/MEMORY buttons (All)</td></tr>
<tr><td>MODE SW</td><td>OFF, ON</td><td>[MODE] button</td></tr>
<tr><td>CUT SW + AUTO SW</td><td>OFF, ON</td><td>[CUT] and [AUTO] buttons</td></tr>
<tr><td>VIDEO FADER</td><td>OFF, ON</td><td>Video fader</td></tr>
<tr><td>OUTPUT FADE SW</td><td>OFF, ON</td><td>[OUTPUT FADE] button</td></tr>
<tr><td>DSK ON/OFF SW</td><td>OFF, ON</td><td>[DSK] button</td></tr>
<tr><td>COMPOSITION BLOCK</td><td>OFF, ON</td><td>[H/PGM-CTR][V/PST-CTR] knobs, [PinP 1][PinP 2][SPLIT] buttons</td></tr>
<tr><td>TRANSITION BLOCK</td><td>OFF, ON</td><td>[MIX][WIPE 1][WIPE 2] buttons, [TIME] knob</td></tr>
<tr><td>DSK BLOCK</td><td>OFF, ON</td><td>[LEVEL][GAIN] knobs, [PVW] button</td></tr>
<tr><td>AUDIO IN 1–6 VOLUME</td><td>OFF, ON</td><td>AUDIO INPUT LEVEL knobs (All)</td></tr>
<tr><td>AUTO MIXING SW</td><td>OFF, ON</td><td>[AUTO MIXING] button</td></tr>
<tr><td>MASTER OUTPUT VOLUME</td><td>OFF, ON</td><td>[MASTER OUTPUT] knob</td></tr>
</table>
• Press and hold the [EXIT] button and the [MENU] button at the same time (for 3 seconds or longer) to turn on panel lock. Buttons and knobs for which panel lock is applied (ON) are locked.</td></tr>
<tr><td rowspan="3">OUTPUT FADE TYPE</td><td colspan="2">This specifies the operation when the [OUTPUT FADE] button is pressed.</td></tr>
<tr><td>VIDEO</td><td>Fade-ins and fade-outs are applied only to video.</td></tr>
<tr><td>VIDEO&AUDIO</td><td>Fade-ins and fade-outs are applied simultaneously to video and audio.</td></tr>
<tr><td>LCD BACKLIGHT</td><td>OFF, ON</td><td>This illuminates (ON) or darkens (OFF) the backlight for the built-in display.</td></tr>
<tr><td>LCD CONTRAST</td><td>0–10–20</td><td>This adjusts the contrast for the built-in display.</td></tr>
<tr><td>LED DIMMER</td><td>0–7</td><td>This adjusts the brightness of the LEDs.
* When this is set to “0,” the LEDs are not completely dark.</td></tr>
<tr><td>MULTI-VIEW LABEL</td><td>OFF, ON</td><td>When this is set to “ON,” labels are displayed on the multi-view monitor.</td></tr>
<tr><td>MULTI-VIEW TALLY</td><td>OFF, ON</td><td>When this is set to “ON,” a tally border is displayed on the multi-view monitor. An AUX symbol is also displayed for the video channel selected as the video on the AUX bus.</td></tr>
<tr><td>AUDIO LEVEL METER</td><td>OFF, ON</td><td>When this is set to “ON,” an audio level meter is displayed on the multi-view monitor. An A.F symbol is also displayed for video channels for which Audio Follow is turned on.</td></tr>
<tr><td>AUTO SCAN</td><td>OFF, ON</td><td>This sets the Auto Scan function on or off.
When this is set to “ON,” channels 1 through 6 are switched automatically.</td></tr>
</table>

<table>
<tr><th>Menu item</th><th>Value (bold text: default value)</th><th>Explanation</th></tr>
<tr><td rowspan="2">AUTO SCAN TIME</td><td>(ENTER)</td><td>The AUTO SCAN TIME menu items shown.</td></tr>
<tr><td colspan="2"><table>
<tr><th>Menu item</th><th>Value</th><th>Explanation</th></tr>
<tr><td>SDI IN 1–SDI IN 4
HDMI IN5, HDMI/RGB IN6</td><td>OFF, 0–5–120sec</td><td rowspan="2">Specifies the length of time that a video is shown when using auto scan.
If this is “OFF,” video switching does not apply to that source.</td></tr>
<tr><td>STILL/BKG IN 7
STILL/BKG IN 8</td><td>OFF, 0–120sec</td></tr>
</table></td></tr>
<tr><td>SCAN TRANSITION TIME</td><td>0.0–1.0–4.0sec</td><td>This specifies the length of the transition between video channels when using auto scan.
* You can also set this by holding down the [EXIT] button and turning the [TIME] knob.</td></tr>
<tr><td rowspan="3">AUTO SCAN SEQUENCE</td><td colspan="2">This specifies the order in which video channels are shown when using auto scan.</td></tr>
<tr><td>NORMAL</td><td>Switch sequentially in the order of channels 1–8.</td></tr>
<tr><td>RANDOM</td><td>Switch randomly.</td></tr>
<tr><td>ON SCREEN MENU</td><td>OFF, UPPER LEFT, UPPER RIGHT, LOWER LEFT, LOWER RIGHT</td><td>This specifies the location of the OSD menu displayed on the multi-view monitor.
When this is set to “OFF,” the OSD menu is always hidden.</td></tr>
<tr><td>AUTO OFF</td><td>OFF, ON</td><td>This sets the Auto Off function on or off. The power to the V-60HD turns off automatically when all of the following states persist for 240 minutes.
• No operation performed on the V-60HD
• No audio or video input
• No equipment is connected to the HDMI OUT connectors</td></tr>
<tr><td>DELETE STILL IMAGE</td><td>STILL IMAGE 1, STILL IMAGE 2</td><td>This selects the memory whose still image is to be deleted. Pressing the [VALUE] knob lets you delete the still image.
* A “✻” symbol is displayed for memory where a still image is saved.</td></tr>
<tr><td>MULTI-VIEW LAYOUT</td><td colspan="2">This specifies the screen layout of the PVW section and PGM section shown in the multi-view monitor.
PVW.PGM
 
PGM.PVW
 
BLACK.PGM
 
The PVW section is not shown.
PGM.BLACK
 
The PVW section is not shown.</td></tr>
<tr><td>MULTI-VIEW LABEL EDIT</td><td>IN1 SDI–IN4 SDI, IN5 HDMI, IN6 HDMI, IN6 RGB, STILL1, STILL2, PGM, PVW</td><td>Press the [VALUE] knob to access the MULTI-VIEW LABEL EDIT screen.
Here you can edit the label name for channels 1–6 shown in the multi-view monitor.</td></tr>
<tr><td>AUX LINKED PGM</td><td>OFF, ON</td><td>When this is set to “ON,” the same video as PGM is output to the AUX bus.</td></tr>
<tr><td rowspan="3">AUX LINKED PGM</td><td colspan="2">This specifies whether the same video as the PGM bus is sent to the AUX bus (AUX link).</td></tr>
<tr><td>OFF</td><td>Use the AUX/MEMORY buttons to select the video of the AUX bus.</td></tr>
<tr><td>AUTO LINK
MANUAL LINK</td><td>AUX link is enabled, and the same video as the PGM bus is sent to the AUX bus.
Temporarily disabling AUX link
When you press an AUX/MEMORY button, the selection of the AUX/MEMORY button is enabled (lit).
Re-enabling AUX link
AUTO LINK: When you operate the [AUTO] button etc. to switch the video of the PGM bus, AUX link is automatically enabled.
MANUAL LINK: When you press the AUX/MEMORY button that is currently selected (lit red), AUX link is enabled.</td></tr>
<tr><td>TEST PATTERN</td><td>OFF, 75% COLOR BAR, 100% COLOR BAR, RAMP, STEP, HATCH</td><td>This specifies the test pattern.</td></tr>
<tr><td>TEST TONE</td><td>OFF
-20dB@1kHz : 1kHz
-10dB@1kHz : 1kHz
0dB@1kHz : 1kHz
-20dB@1kHz : 400Hz
-10dB@1kHz : 400Hz
0dB@1kHz : 400Hz</td><td>This specifies the test tone.</td></tr>
<tr><td>VIDEO FADER CALIBRATE</td><td>(ENTER)</td><td>The VIDEO FADER CALIBRATE screen appears.
Following the instructions on the screen, calibrate (adjust) the video fader.</td></tr>
<tr><td>FACTORY RESET</td><td>(EXEC)</td><td>This returns the unit to its factory defaults.</td></tr>
<tr><td>VERSION</td><td>—</td><td>This displays the version of the system program.</td></tr>
</table>

Remotely Controlling a Camera

You can connect up to six cameras via the LAN port and remotely control them from the V-60HD.
This allows you to control cameras made by JVC, Panasonic, Canon, PTZOptics, and Avonic, and cameras that support VISCA over IP (such as Sony).

* Refer also to the owner's manual of your camera.

Network Settings on the Camera

In order to control a camera from the V-60HD, you need to make network settings on the camera. You can register up to six cameras.

1. Select the [MENU] button → "CAMERA CONTROL."

2. Select the menu item, and use the [VALUE] knob to make network settings.

Menu item	Explanation
CAMERA ID	Selects the camera to be controlled.
PROTOCOL	Specifies the camera's protocol. JVC camera: JVC Panasonic camera: Panasonic Canon vcamera: Canon Cameras that support VISCA over IP (such as Sony): VISCA over IP PTZOptics camera: PTZOptics Avonic camera: Avonic
CAMERA IP ADDRESS	Input the camera's IP address.
LOGIN NAME	**When "PROTOCOL" is "JVC"** Press the [VALUE] knob to display the LOGIN NAME screen. Enter the log-in name needed to connect with the camera.
PASSWORD	**When "PROTOCOL" is "JVC"** Press the [VALUE] knob to display the PASSWORD screen. Enter the password needed to connect with the camera.

3. Press the [VALUE] knob to apply the setting.

4. Press the [MENU] button to quit the menu.

Controlling a Canon Camera

Here's how to control the settings of the connected camera from the V-60HD.

1. Select the [MENU] button → "CAMERA CONTROL" → "CAMERA ID."

2. Use the [VALUE] knob to select the camera that you want to control, and press the [VALUE] knob to confirm.

3. Select a menu item, and use the [VALUE] knob to control the camera's setting.

Menu item	Explanation
SD CARD SLOT	Specifies the SD card slot to use.
REC STATUS	Indicates the video recording status.
REMAINING TIME	Indicates the remaining available recording time.
WHITE BALANCE	Specifies the white balance type.
TEMPERATURE (*1)	Specifies the color temperature.
PRESET SET (*2)	When you press the [VALUE] knob, the subject shown by the camera is captured as the reference white color.
ZOOM	Adjusts the camera's zoom position. (*3)
ZOOM POSITION	Adjusts the zoom position in six stages.
FOCUS	Adjusts the focal point of the camera. (*3)
AUTO FOCUS	When this is set to "ON," the focal point is set automatically.
FOCUS GUIDE	If this is "ON," a focus guide is shown.
EXPOSURE	Sets the exposure mode.
ND	Specifies the type of ND filter.
IRIS	Adjusts the aperture value.
SHUTTER	Adjusts the shutter speed.
GAIN	Adjusts the gain.
AE SHIFT	Adjusts the amount of exposure compensation when using auto exposure.

(*1) This can be set if "WHITE BALANCE" is "COLOR TEMPERATURE."
(*2) This can be set if "WHITE BALANCE" is "PRESET 1" or "PRESET 2."
(*3) You can control the camera while holding down the [VALUE] knob.

4. Press the [VALUE] knob to apply the setting.

5. Press the [MENU] button to quit the menu.

Controlling a JVC/Panasonic/PTZOptics/Avonic Camera or a Camera That Supports VISCA over IP

Registering Camera Settings in a Preset

Up to eight sets of settings such as camera position and focus can be registered as presets.

A registered preset can be recalled when needed.

* Presets are saved in the camera itself.

1. Select the [MENU] button → "CAMERA CONTROL" → "CAMERA ID."

2. Use the [VALUE] knob to select the camera that you want to control, and press the [VALUE] knob to confirm.

3. Select a menu item, and use the [VALUE] knob to control the camera's setting.

Menu item	Explanation
PAN	Adjusts the horizontal position of the camera. (*1)
TILT	Adjusts the vertical position of the camera. (*1)
PAN/TILT SPEED	Adjusts the speed at which the camera changes direction.
ZOOM	Adjusts the camera's zoom position. (*1)
FOCUS	Adjusts the focal point of the camera. (*1)
AUTO FOCUS	When this is set to "ON," the focal point is set automatically.
EXPOSURE	Sets the exposure mode.
TALLY CH	Specifies the channel that is inputting the camera video. When the camera video from the V-60HD is the final output, the camera's tally light is lit.

(*1) You can control the camera while holding down the [VALUE] knob.

4. Press the [VALUE] knob to apply the setting.

5. Select "CAMERA PRESET STORE."

6. Use the [VALUE] knob to select the preset (1–8) in which you want to register the settings, and press the [VALUE] knob.

A confirmation message appears.

If you want to cancel the operation, press the [EXIT] button.

7. Use the [VALUE] knob to select "YES," then press the [VALUE] knob.

The camera settings are registered in the preset.

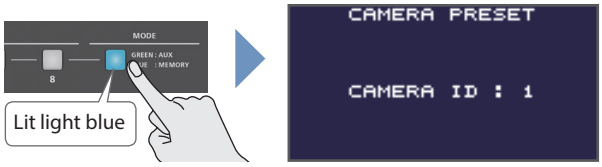
8. Press the [MENU] button to quit the menu.

Recalling a Preset

Recalling from a Single Camera

1. Select the [MENU] button → "CAMERA CONTROL" → set "ALL CAMERAS RECALL" to "OFF."

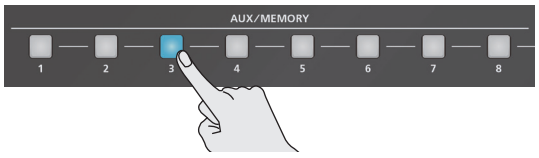
2. Press and hold the [MODE] button to make it light up in light blue.



The unit is in camera preset mode. The AUX/MEMORY buttons operate as preset select buttons.

3. Using the [VALUE] knob, change the "CAMERA ID" to select the camera whose preset you want to recall.

4. Press the AUX/MEMORY button for the preset number whose setting you want to recall.



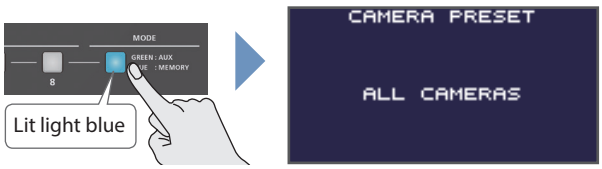
The preset recalled from the camera.

5. To exit camera preset mode, press the [MODE] button to make it light green or blue.

Recalling from All Cameras Simultaneously

1. Select the [MENU] button → "CAMERA CONTROL" → set "ALL CAMERAS RECALL" to "ON."

2. Press and hold the [MODE] button to make it light up in light blue.



The unit is in camera preset mode. The AUX/MEMORY buttons operate as preset select buttons.

3. Press the AUX/MEMORY button for the preset number whose setting you want to recall.

Presets are recalled from all cameras simultaneously.

4. To exit camera preset mode, press the [MODE] button to make it light green or blue.

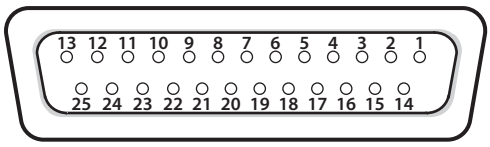
Control Using the TALLY/GPI Connector

You can operate the V-60HD remotely from an external device by inputting a GPI control signal via the TALLY/GPI connector.

And you can output a tally signal from the TALLY/GPI connector.

Specification of the TALLY/GPI Connector

Pin layout



DB-25 type (female)

Tally output

Trigger method	Open collector
Maximum input	12 V/200 mA

Control input

Trigger method	No-voltage contact (make-contact) triggering
Contact capacity	DC 24 V 0.1 A or higher
Input method	Photocoupler

Pin assignments

Pin No.	Function	Pin No.	Function
1	TALLY 1 PGM	14	N.C.
2	TALLY 1 PST	15	N.C.
3	TALLY 2 PGM	16	N.C.
4	TALLY 2 PST	17	GND
5	TALLY 3 PGM	18	GPI 1
6	TALLY 3 PST	19	GPI 2
7	TALLY 4 PGM	20	GPI 3
8	TALLY 4 PST	21	GPI 4
9	TALLY 5 PGM	22	GPI 5
10	TALLY 5 PST	23	GPI 6
11	TALLY 6 PGM	24	GPI 7
12	TALLY 6 PST	25	GPI 8
13	N.C.		

* Never connect anything to an N.C. pin.

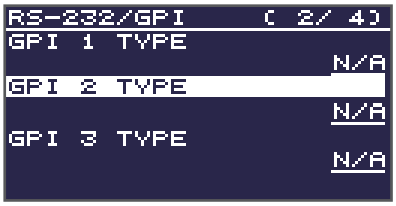
Outputting a Tally Signal

A tally signal is output from the connector pin corresponding to the video channel being output, also including video composition and transition effects.

Inputting a Control Signal

To operate the V-60HD remotely using control-signal input, you first assign the function to a GPI channel (1 through 8).

1. Select the [MENU] button → "RS-232/GPI" → "GPI 1 TYPE" through "GPI 8 TYPE."



2. Use the [VALUE] knob to specify the function to assign to the GPI channel (1 through 8).

Value	Explanation
N/A	No function is assigned.
PGM CH SEL 1–8	Switches the final output video.
PST CH SEL 1–8	Switches the preset video (the video to be output next).
MEMORY LOAD 1–8	Loads a preset memory.
DSK SRC SEL 1–8	During DSK compositing, switches the channel of the overlaid logo or image.
MUTE AUDIO IN 1–5/6	Turns the input audio mute function on/off.
MUTE SDI IN 1–4	
MUTE HDMI IN 5–6	
SOLO AUDIO IN 1–5/6	Turns the input audio solo function on/off.
SOLO SDI IN 1–4	
SOLO HDMI IN 5, 6	
DSK SW	Performs the same operation as pressing the [DSK] button.
AUTO SW	Performs the same operation as pressing the [AUTO] button.
CUT SW	Performs the same operation as pressing the [CUT] button.
OUTPUT FADE SW	Performs the same operation as pressing the [OUTPUT FADE] button.
AUTO MIXING SW	Performs the same operation as pressing the [AUTO MIXING] button.

3. Press the [VALUE] knob to apply the setting.

4. Press the [MENU] button to quit the menu.

When a control signal is input from an external source, the assigned function is executed. The GPI trigger is fixed at the trailing edge (low: ON).

LAN/RS-232 Command Reference

V-60HD support two types of remote-interface communication: LAN and RS-232.

Using the CONTROL port (LAN) or RS-232 connector to send specific commands to the V-60HD from a controlling device lets you operate the V-60HD remotely.

LAN Interface

This uses the CONTROL port on the V-60HD.

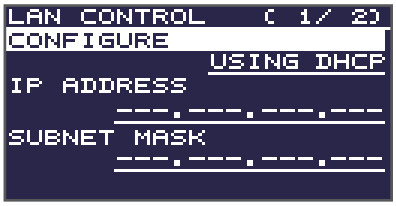
You use Telnet to operate the V-60HD remotely over a LAN (TCP/IP protocol).

Communication standards

Port	CONTROL port (LAN)
Protocol	TCP
Port number	8023

Setting the IP address of the V-60HD

1. **Select the [MENU] button → "LAN CONTROL."**
2. **Select a menu item, then use the [VALUE] knob to set the IP address.**



Menu item	Explanation
CONFIGURE	Sets whether the IP address and subnet mask are obtained automatically (USING DHCP) or set manually (MANUALLY).
IP ADDRESS	Sets the IP address when "CONFIGURE" is set to "MANUALLY." Set this in accordance with the connected network.
SUBNET MASK	Sets the subnet mask when "CONFIGURE" is set to "MANUALLY." Set this in accordance with the connected network.

3. **Press the [VALUE] knob to apply the setting.**
4. **Press the [MENU] button to quit the menu.**

Verifying the LAN information

1. **Select the [MENU] button → "LAN CONTROL" → "INFORMATION."**
2. **With the cursor positioned at "ENTER," press the [VALUE] knob.**

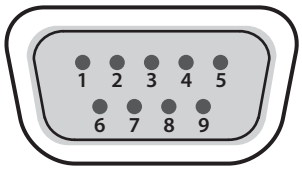
   You can check and verify the following information.

Indication	Explanation
STATUS	Displays the connection status.
IP ADDRESS	Displays the IP address.
SUBNET MASK	Displays the subnet mask.
MAC ADDRESS	Displays the MAC address.

3. **Press the [MENU] button to quit the menu.**

RS-232 Interface

RS-232 connector pin layout



DB-9 type (male)

Pin assignments

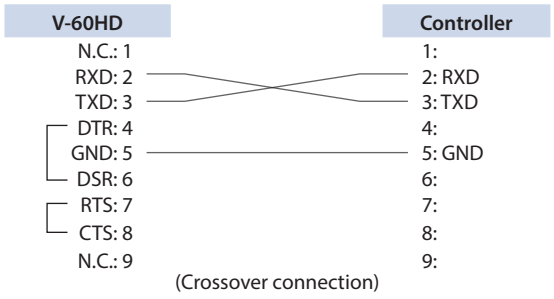
Pin No.	Signal
1	N.C.
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	N.C.

Communication standards

Communication method	Synchronous (asynchronous), full-duplex
Communication speed	9,600 /38,400 bps
Parity	none
Data length	8 bits
Stop bit	1 bit
Code set	ASCII
Flow control	XON/XOFF

Cable wiring diagram

Use an RS-232 crossover cable to connect the V-60HD and the controller (an RS-232-compatible computer or other device).



(Crossover connection)

* The connections between 4 and 6 and between 7 and 8 are inside the V-60HD.

Command Format

Commands are formatted using the configuration shown below. Commands are all in ASCII code.

stx	Command code	:	Parameter	,	Parameter	;

stx	ASCII code "02H" is a control code indicating the start of a command. "H" indicates that it is a hexadecimal value.
Command code	This specifies the command type (3 letters of the alphabet).
Parameter	This is appended to a command that requires one or more parameter. The command and the parameter portion are separated by a " : " (colon). When there are multiple parameters, they are each separated by " , " (comma) characters.
;	This is the code that the V-60HD recognizes as the end of a command.

* The codes of stx (02H), ACK (06H), and XON (11H)/ XOFF (13H) are the control codes.

List of Commands

* When sending a sequence of commands to the V-60HD from a controller, after each one, be sure to verify that an "ACK" response is returned before sending the next command.

Video-related operations

Item	Sent command	Response command	Parameter
Select channel for final video output	stxPGM:a;	ACK	a: 0 (SDI IN 1), 1 (SDI IN 2), 2 (SDI IN 3), 3 (SDI IN 4), 4 (HDMI IN 5), 5 (HDMI/RGB IN 6), 6 (STILL/BKG IN 7), 7 (STILL/BKG IN 8)
Select channel for preset video	stxPST:a;	ACK	a: 0 (SDI IN 1), 1 (SDI IN 2), 2 (SDI IN 3), 3 (SDI IN 4), 4 (HDMI IN 5), 5 (HDMI/RGB IN 6), 6 (STILL/BKG IN 7), 7 (STILL/BKG IN 8)
Select channel to send to AUX bus	stxAUX:a;	ACK	a: 0 (SDI IN 1), 1 (SDI IN 2), 2 (SDI IN 3), 3 (SDI IN 4), 4 (HDMI IN 5), 5 (HDMI/RGB IN 6), 6 (STILL/BKG IN 7), 7 (STILL/BKG IN 8)
Select transition effect	stxTRS:a;	ACK	a: 0 (MIX), 1 (WIPE 1), 2 (WIPE 2)
Set video transition time	stxTIM:a;	ACK	a: 0 (0.0 sec)–40 (4.0 sec)
Press the [CUT] button	stxCUT;	ACK	
Press the [AUTO] button	stxATO;	ACK	
Press the [PinP 1] button	stxP1S;	ACK	
Press the [PinP 2] button	stxP2S;	ACK	
Press the [SPLIT] button	stxSPS;	ACK	
Press the [DSK] button	stxDSK;	ACK	
Press the DSK [PVW] button	stxDVW;	ACK	
Press the DSK [AUTO MIXING] button	stxATM;	ACK	
Press the DSK [OUTPUT FADE] button	stxFDE;	ACK	
Adjust display position of inset screen assigned to the [PinP 1] button	stxPP1:a,b;	ACK	a: -450–450 Horizontal position b: -400–400 Vertical position
Adjust display position of inset screen assigned to the [PinP 2] button	stxPP2:a,b;	ACK	a: -450–450 Horizontal position b: -400–400 Vertical position
During split composition, adjust the display position of the video	stxSPT:a,b;	ACK	**When the split composition pattern is "V-CENTER"** This adjusts the display position in the horizontal direction. a: -250–250 final output video (video on the left) b: -250–250 preset video (video on the right) **When the split composition pattern is "H-CENTER"** This adjusts the display position in the vertical direction. a: -250–250 final output video (upper video) b: -250–250 preset video (lower video)
During DSK composition, set the channel of the overlaid logo or image	stxDSS:a;	ACK	a: 0 (SDI IN 1), 1 (SDI IN 2), 2 (SDI IN 3), 3 (SDI IN 4), 4 (HDMI IN 5), 5 (HDMI/RGB IN 6), 6 (STILL/BKG IN 7), 7 (STILL/BKG IN 8)
Adjust the key level (amount of extraction) for DSK composition	stxKYL:a;	ACK	a: 0–255
Adjust the key gain (semi-transmissive region) for DSK composition	stxKYG:a;	ACK	a: 0–255
Select input connector for channel 6	stxIPS:a;	ACK	a: 0 (HDMI), 1 (RGB/COMPONENT)
Set the vidoe bus to assign to the SDI OUT 1 connector	stxOS1:a;	ACK	a: 0 (PGM), 1 (PVW), 2 (AUX)
Set the vidoe bus to assign to the SDI OUT 2 connector	stxOS2:a;	ACK	a: 0 (PGM), 1 (PVW), 2 (AUX)
Set the vidoe bus to assign to the HDMI OUT 1 connector	stxOH1:a;	ACK	a: 0 (PGM), 1 (PVW), 2 (AUX)
Set the vidoe bus to assign to the HDMI OUT 2 connector	stxOH2:a;	ACK	a: 0 (PGM), 1 (PVW), 2 (AUX)

Audio-related operations

Item	Sent command	Response command	Parameter
Adjust volume level of input audio	stxIAL:a,b;	ACK	a: 0 (AUDIO IN 1), 1 (AUDIO IN 2), 2 (AUDIO IN 3), 3 (AUDIO IN 4), 4 (AUDIO IN 5/6), 5 (SDI IN 1), 6 (SDI IN 2), 7 (SDI IN 3), 8 (SDI IN 4), 9 (HDMI IN 5), 10 (HDMI IN 6) b: -801 (-INF), -800 (-80.0 dB)–0 (0.0 dB)–100 (10.0 dB)
Adjust volume level for master out	stxOAL:a;	ACK	a: -801 (-INF), -800 (-80.0 dB)–0 (0.0 dB)–100 (10.0 dB)
Adjust volume level for AUX-bus audio	stxOAX:a;	ACK	a: -801 (-INF), -800 (-80.0 dB)–0 (0.0 dB)–100 (10.0 dB)
Adjust delay time of input audio	stxADT:a,b;	ACK	a: 0 (AUDIO IN 1), 1 (AUDIO IN 2), 2 (AUDIO IN 3), 3 (AUDIO IN 4), 4 (AUDIO IN 5/6) b: 0 (0.0 fps)–120 (12.0 fps)
Acquire information on volume level	stxQAL:a;	stxQAL:b; ACK	**Sent command parameters** a: 0 (AUDIO IN 1), 1 (AUDIO IN 2), 2 (AUDIO IN 3), 3 (AUDIO IN 4), 4 (AUDIO IN 5/6), 5 (SDI IN 1), 6 (SDI IN 2), 7 (SDI IN 3), 8 (SDI IN 4), 9 (HDMI IN 5), 10 (HDMI IN 6), 11 (MASTER OUT), 12 (AUX), 12 (ALL) **Response command parameters** When a=0, b: -801–100 AUDIO IN 1 volume level When a=1, b: -801–100 AUDIO IN 2 volume level When a=2, b: -801–100 AUDIO IN 3 volume level When a=3, b: -801–100 AUDIO IN 4 volume level When a=4, b: -801–100 AUDIO IN 5/6 volume level When a=5, b: -801–100 SDI IN 1 volume level When a=6, b: -801–100 SDI IN 2 volume level When a=7, b: -801–100 SDI IN 3 volume level When a=8, b: -801–100 SDI IN 4 volume level When a=9, b: -801–100 HDMI IN 1 volume level When a=10, b: -801–100 HDMI IN 2 volume level When a=11, b: -801–100 AUX-bus audio volume level When a=12, b: -801–100 MASTER OUT volume level When a=13, sends all volume levels. Example: stxQAL:100,80,70,60,50,40,30,20,100,80,70,60,50;
Specify the mute function for input audio	stxIAM:a;	ACK	a: 0 (AUDIO IN 1), 1 (AUDIO IN 2), 2 (AUDIO IN 3), 3 (AUDIO IN 4), 4 (AUDIO IN 5/6) 5 (SDI 1), 6 (SDI 2), 7 (SDI 3), 8 (SDI 4), 9 (HDMI 5), 10 (HDMI 6)
Specify the solo function for input audio	stxIAS:a;	ACK	a: 0 (AUDIO IN 1), 1 (AUDIO IN 2), 2 (AUDIO IN 3), 3 (AUDIO IN 4), 4 (AUDIO IN 5/6) 5 (SDI 1), 6 (SDI 2), 7 (SDI 3), 8 (SDI 4), 9 (HDMI 5), 10 (HDMI 6)

System-related operations

Item	Sent command	Response command	Parameter
Set HDCP on/off	stxHCP:a;	ACK	a: 0 (OFF), 1 (ON)
Set test pattern	stxTPT:a;	ACK	a: 0 (OFF), 1 (75% COLOR BAR), 2 (100% COLOR BAR), 3 (RAMP), 4 (STEP), 5 (HATCH)
Set test tone	stxTTN:a;	ACK	a: 0 (OFF), 1 (-20dB@1kHz : 1kHz), 2 (-10dB@1kHz : 1kHz), 3 (0dB@1kHz : 1kHz) 4 (-20dB@1kHz : 400Hz), 5 (-10dB@1kHz : 400Hz), 6 (0dB@1kHz : 400Hz)
Call up preset memory	stxMEM:a;	ACK	a: 0 (1), 1 (2), 2 (3), 3 (4), 4 (5), 5 (6), 6 (7), 7 (8)
Acquire status of operation-panel buttons	stxQPL:a;	stxQPL:b; ACK	**Sent command parameters** a: 0 (PGM), 1 (PST), 2 (AUX), 3 (PinP/SPLIT), 4 (DSK), 5 (OUTPUT FADE), 6 (Video fade level), 7 (ALL), **Response command parameters** When a=0, b: 0 (CH 1)–7 (CH 8) Status of the PGM/A bus cross-point buttons When a=1, b: 0 (CH 1)–7 (CH 8) Status of the PST/B bus cross-point buttons When a=2, b: 0 (CH 1)–7 (CH 8) Status of the AUX/MEMORY buttons (AUX bus selection) When a=3, b: 0 (Off) [PinP 1], [PinP 2], and [SPLIT] buttons are all off 1 (On) [PinP 1] button is on 2 (On) [PinP 2] button is on 3 (On) [SPLIT] button is on When a=4, b: 0 (Off), 1 (On) [DSK] button on/off When a=5, b: 0 (Off), 1 (On) [OUTPUT FADE] button status (unlit/lit) When a=6, b: 0–2047 When a=7, sends all information described above. Example: stxQAL:stxQPL:0,1,0,1,1,0;
Acquire cross-point status	stxTLY;	stxTLY:a,b,..,h; ACK	a–h: 0 (Dark), 1 (Red), 2 (Green) Returns the cross-point status of channels 1–8. Example: TLY:1, 2, 0, 0, 0, 0, 0, 0;
Acquire status of V-60HD	stxACS;	ACK	
Version information	stxVER;	stxVER:V-60HD,a;	a: Version * The version info is ASCII text strings.
Flow control	XON		
Flow control	XOFF		

Commands spontaneously sent from the V-60HD

Item	Sent command	Response command	Parameter
Error detected		stxERR:a;	a: 0 (syntax error) The received command contains an error. 4 (invalid) This has no effect because it is controlled by another setting. 5 (out of range error) An argument of the received command is out of range.
Flow control		XON	
Flow control		XOFF