SONY

A-DBN-100-**11**(1)

HD Color Video Camera

Technical Manual

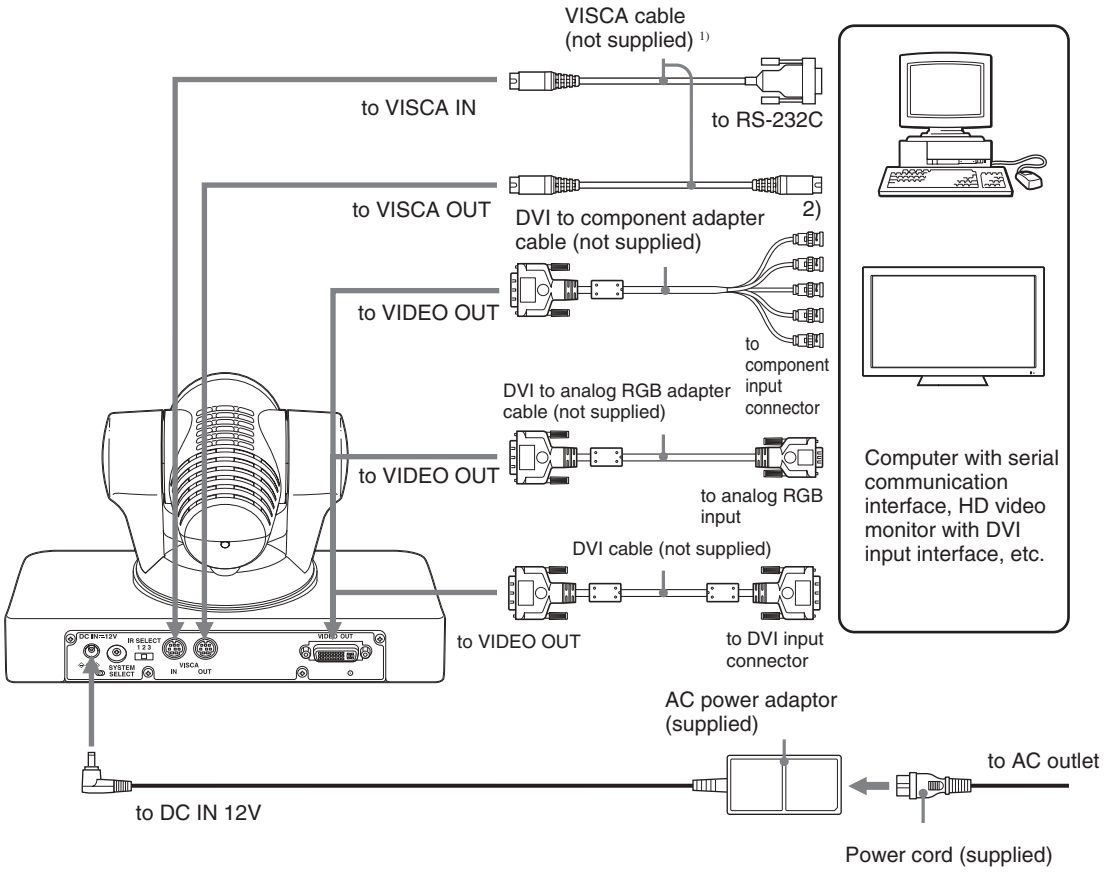
EVI-HD7V/HD3V

Table of Contents

Features

- The CMOS image sensor allows highdefinition shooting with superior picture quality.
- By adopting a direct drive mechanism, the high-speed pan/tilt movement of the camera head is so quiet it can be used in any noise sensitive environment.
- The EVI-HD7V camera allows you to shoot moving objects in Full HD progressive scan for high-resolution image output. The EVI-HD7V also allows output in the interlaced format used in HDTV broadcasts. Including 59.94 Hz and 50 Hz frequencies, the EVI-HD7V camera is compatible with a total of 11 video formats, while the EVI-HD3V is compatible with a total of 5 video formats.
- The DVI-I (VIDEO OUT) connector supports both digital and analog output.
- The camera is equipped with an RS-232C communication interface. You can select the baud rate of either 38,400 bps or 9,600 bps. This allows you to remotely control the camera at a high communication speed.

Connection



1) When the camera is connected to a computer with a VISCA cable (cross type, RS-232C), you can operate the camera with the computer. To obtain a cable, consult the dealer where you bought your camera.
2) To VISCA IN of other EVI-HD7V/HD3Vs (when connecting to more than one camera)

Notes

• Use only the AC power adaptor (JEITA type4) supplied with the unit. Do not use any other AC power adaptor.

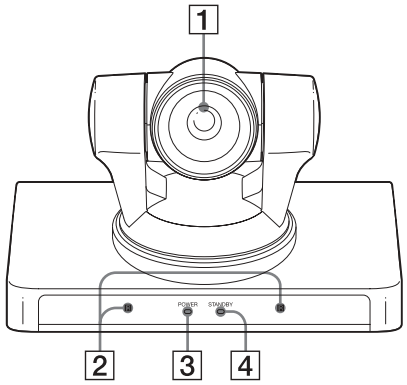
Polarity of the plug

• You have to set the video format of the signal to be output from the camera. For detailed information on how to set the video format, see "6 SYSTEM SELECT switch" on page 5.

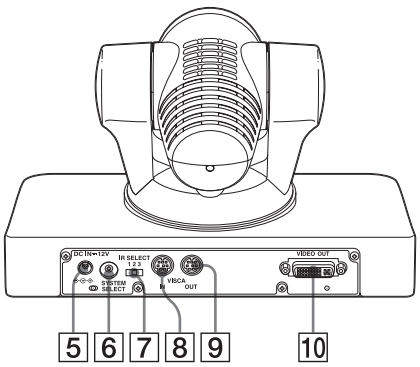
Locations of Controls

Main Unit

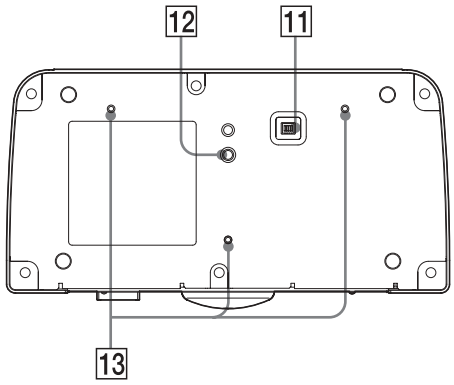
Front



Rear



Bottom



1 Lens

2 Remote sensors

3 POWER lamp

4 STANDBY lamp

For detailed information on LED status of the POWER lamp and STANDBY lamp, see "LED Status" on page 37.

5 DC IN 12V connector

6 SYSTEM SELECT switch

This switch allows you to select the video format of the signal to be output from the VIDEO OUT connectors.

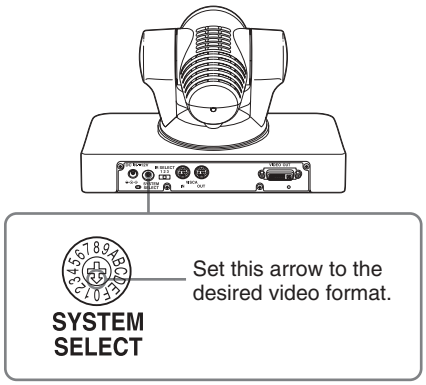
Notes

- Be sure to set this switch before you turn on the power of the camera. You can also set this switch in the standby mode of the camera. After completing the setting, turn on the power of the camera by connecting it to an AC outlet using the supplied AC power adaptor and AC power cord, or by using

(Continued)

the VISCA command. When you set this switch in the standby mode, press the POWER switch of the remote commander. This switch setting becomes effective.

- Be sure to use a Phillips-head screwdriver when changing the switch position. If you use a tool other than the designated screwdriver, the crossed groove may be damaged.
- This camera does not include a function that automatically selects video output signals based on the DVI monitor's resolution. Be sure to configure settings based on the monitor manually.
- HDTV video signal outputs display without distortion on monitors with 16:9 aspect ratios.



Switch position	Video format	EVI-HD7V support	EVI-HD3V support	
0	1920×1080p/59.94	Yes	No	59.94 Hz system
1	1920×1080p/29.97	Yes	No	
2	1920×1080i/59.94	Yes	No	
3	1280×720p/59.94	Yes	Yes	
4	1280×720p/29.97	Yes	Yes	
5	640×480p/59.94 (LB)	Yes	Yes	
6	No output	—	—	—
7	VISCA CONTROL	Yes	Yes	—
8	1920×1080p/50	Yes	No	50 Hz system
9	1920×1080p/25	Yes	No	
A	1920×1080i/50	Yes	No	
B	1280×720p/50	Yes	Yes	
C	1280×720p/25	Yes	Yes	
D	No output	—	—	—
E	No output	—	—	—
F	No output	—	—	—

Yes: Outputs the image signal.
No: Does not output the image signal
LB: Abbreviation of LETTER BOX. A video signal with the 16:9 aspect ratio is output by adding a blank area (no signal, black) top and bottom to display the image without distortion on a monitor that uses the 4:3 aspect ratio.

Notes

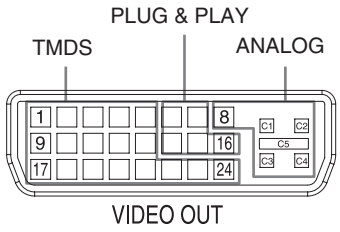
- If the switch position is set to "no output," the POWER lamp and STANDBY lamp will both remain lit. In such cases, control via the remote commander and VISCA commands is disabled.
- The VISCA CONTROL switch position allows you to configure the video format via external communication. However, video output will take longer compared to other switch positions. For details on the video output format settings command, see page 28.

7 IR SELECT switch

8 VISCA IN connector

9 VISCA OUT connector

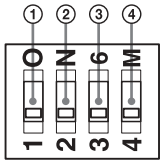
10 VIDEO OUT connector



Pin No.	Function
1	Data_2-
2	Data_2+
3	Shield (2, 4)
4	No connection
5	No connection
6	No connection
7	No connection
8	Analog Vertical Sync
9	Data_1-
10	Data_1+
11	Shield (1, 3)
12	No connection
13	No connection
14	Power_+5 V
15	GND
16	Hot Plug
17	Data_0-
18	Data_0+
19	Shield (0, 5)
20	No connection
21	No connection
22	Shield Clock
23	Clock+
24	Clock-
C1	Analog Red/Pr*
C2	Analog Green/Y*
C3	Analog Blue/Pb*
C4	Analog Horizontal Sync
C5	Analog GND

* The signals for pins C1, C2, and C3 can be changed with the COLOR SYSTEM setting.

11 BOTTOM switches



① Switch 1 (infrared remote commander signal output switch)
Set to ON to enable output of the receiver signals, that are transmitted from the Remote Commander, from the VISCA IN connector, or set it to OFF to disable the output.

② Switch 2 (Communication baud rate selector)
Set to ON for 38,400 bps, or OFF for 9,600 bps.

Note

Set the communication baud rate before turning on the power. If you set the communication baud rate after turning on the power, the setting is ignored.

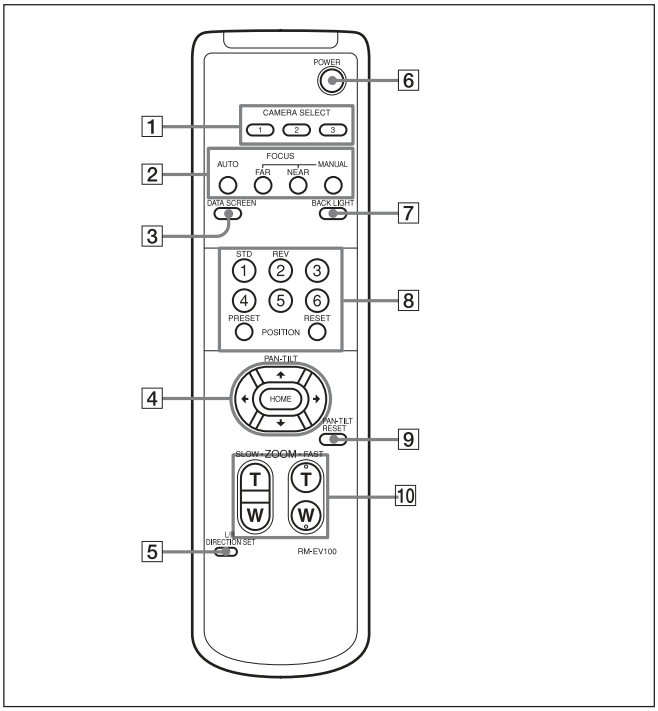
③ Switch 3 (sync switch)
Select whether to add sync to the analog video signals output from the VIDEO OUT connector. Use this when analog input monitors are connected. In particular, add sync during non-HD/-VD connections.

④ Switch 4 (Not used)
Be sure to set this switch to OFF.

12 Tripod screw hole (1/4-20UNC)

13 Fixing screw holes (M3)

Remote Commander



1 CAMERA SELECT buttons

Press the button corresponding to the camera you want to operate with the Remote Commander.
The camera number can be set using the IR SELECT switch on the rear of the camera.

Note

If two or more cameras are adjacent and have the same camera number, they are operated simultaneously with the same Remote Commander. When you install the cameras close to each other, set different camera numbers.
For the camera number setting, see “Operating Multiple Cameras with the Remote Commander” described in the Operating Instructions supplied with the camera.

2 FOCUS buttons

Used for focus adjustment.
Press the AUTO button to adjust the focus automatically.
To adjust the focus manually, press the MANUAL button, and adjust it with the FAR and NEAR buttons.

3 DATA SCREEN button

Press this button to display the main menu. Press it again to turn off the menu. If you press the button when a lower-level menu is selected, the display goes back to a higher-level menu.

Note

Pan/tilt operations are disabled when the menu is displayed.

4 PAN-TILT buttons

Press the arrow buttons to perform panning and tilting. Press the HOME button to face the camera back to the front.
When the menu is displayed, use ↑ or ↓ to select the menu items and ← or → to change the set values. The selected setting menu is displayed, by pressing the HOME button when the main menu is displayed.
The Pan/tilt speed will slow down when the camera is zoomed, in order to allow precise positioning.

5 L/R DIRECTION SET button

Hold down this button and press the REV button to change the direction of the camera movement opposite to that indicated by the arrow of the ←/→ buttons.
To reset the direction of the camera movement, press the STD button while holding down this button.

6 POWER switch

Press this button to turn on/off the camera when the camera is connected to an AC outlet.

7 BACK LIGHT button

Press this button to enable the backlight compensation. Press it again to disable the backlight compensation.

8 POSITION buttons

Hold down the PRESET button and press button 1 to 6 to store the current camera direction, zooming, focus adjustment and backlight compensation in the memory of the pressed number button.
To erase the memory contents, hold down the RESET button and press button 1 to 6.

9 PAN-TILT RESET button

Press this button to reset the pan/tilt position.

10 ZOOM buttons

Use the SLOW button to zoom slowly, and the FAST button to zoom quickly.
Press the T (telephoto) side of the button to zoom in, and the W (wide angle) side to zoom out

Basic Functions

Zoom

The camera employs an 10× optical zoom lens combined with a digital zoom function allowing you to zoom up to 40×.

Lens specifications: Optical 10×, f = 3.4 to 33.9 mm (F1.8 to F2.1)

The horizontal angle of view is approximately 70 degrees (wide end) to 8 degrees (tele end).
Digital Zoom enlarges the center of the subject by expanding each image in both the vertical and horizontal directions. When 4× digital zoom is used, the number of effective picture elements in each direction reduces to 1/4 and the overall resolution deteriorates.

You can activate the zoom in the following two ways:

- **By pressing the T (tele) or W (wide) buttons on the Remote Commander.**
- **Using a VISCA Command**

  Using Standard Mode
  Using Variable Mode
  There are eight levels of zoom speed.
  Direct Mode
  Setting the zoom position enables quick movement to the designated position.

Focus

Focus has the following modes, all of which can be set using VISCA Commands.

- **Auto Focus Mode**
  The minimum focus distance is 100 mm at the optical wide end (extreme close-up settings with VISCA control) (distance from the front end of the lens).

- **Manual Focus Mode**
  MF (Manual Focus) has both a Standard Speed Mode and a Variable Speed Mode. Standard Speed Mode focuses at a fixed rate of speed. Variable Speed Mode has eight speed levels that can be set using a VISCA Command.

  To stop the required operation after sending a Standard Speed command or a Variable Speed command, send the Stop command.

- **One Push Trigger Mode**
  When a Trigger Command is received, the lens moves to adjust the focus for the subject. The focus lens then holds the same position until the next Trigger Command is input.

- **Infinity Mode**
  The lens is forcibly moved to a position suitable for an unlimited distance.

- **Near Limit Mode**
  Can be set in a range from about 3 m (2000) to 10 cm (7600).
  The focus range is narrowed by excluding the unnecessary range.

White Balance

White Balance has the following modes, all of which can be set using VISCA Commands.

- **Auto White Balance**
  This mode computes the white balance value output using color information from the entire screen. It outputs the proper value using the color temperature radiating from a black subject based on a range of values from 3,000 to 7,500 K.
  This mode is the default setting.
- **Indoor**
  3,200 K Base Mode
- **Outdoor**
  5,800 K Base Mode
- **One Push WB**
  The One Push White Balance mode is a fixed white balance mode that may be automatically readjusted only at the request of the user (One Push Trigger), assuming that a white subject, in correct lighting conditions and occupying more than 1/2 of the image, is captured by to the camera.
  One Push White Balance data is lost when the power is turned off. If the power is turned off, reset the One Push White Balance.
- **Manual WB**
  Manual control of R and B gain, 256 steps each

Automatic Exposure Mode

The variety of AE functions, which allow video signal to output the optimum image for subjects from low light conditions to bright light conditions, are available.

- **Full Auto**
  Auto Iris and Gain, Fixed Shutter Speed (59.94/29.97: 1/60 s, 50/25: 1/50 s)
- **Shutter Priority** 1)
  Variable Shutter Speed, Auto Iris and Gain (1/60 or 1/50 to 1/10,000 s, 21 steps, high speed shutter: 15 steps, slow shutter: 6 steps)
- **Iris Priority**
  Variable Iris (F1.8 to Close, 18 steps), Auto Gain and Shutter speed.
- **Manual**
  Variable Shutter, Iris and Gain.
- **Bright**
  Variable Iris and Gain (Close to F1.8, 18 steps at 0 dB: F1.8, 6 steps from 0 to 18 dB)
- **Spot light**
  Avoids a situation where the face of the subject is over-illuminated, and becomes whitish.

AE – Shutter Priority

In high speed mode, the shutter speed can be set up to 1/10,000 s. The iris and gain are set automatically, according to the brightness of the subject.

Parameter	59.94/29.97 [sec]	50/25 [sec]
15	1/10,000	1/10,000
14	1/6,000	1/6,000
13	1/4,000	1/3,500
12	1/3,000	1/2,500
11	1/2,000	1/1,750
10	1/1,500	1/1,250
0F	1/1,000	1/1,000
0E	1/725	1/600
0D	1/500	1/425
0C	1/350	1/300
0B	1/250	1/215
0A	1/180	1/150
09	1/125	1/120
08	1/100	1/100
07	1/90	1/75
06	1/60	1/50

Note

When the low shutter speed is used, Auto Focus and White Balance may not function fully.

1) Flicker can be eliminated by setting shutter to:
→ 1/100 s for 59.94/29.97 models used in countries with a 50 Hz power supply frequency.
→ 1/120 s for 50/25 models used in countries with a 60 Hz power supply frequency.

AE – Iris Priority

The iris can be set freely by the user to 18 steps between F1.8 and Close.
The gain and shutter speed are set automatically according to the brightness of the subject.

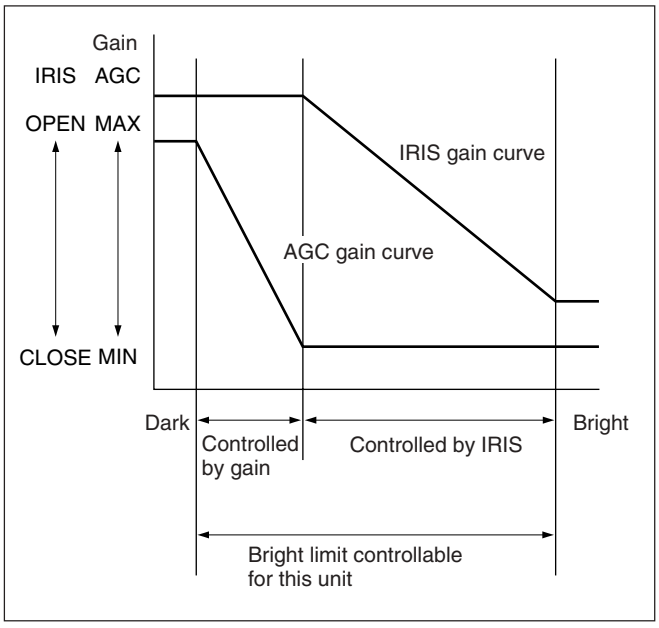
parameter	IRIS (F1.8) F No.	parameter	IRIS (F1.8) F No
11	F1.8	08	F8.0
10	F2.0	07	F9.6
0F	F2.4	06	F11
0E	F2.8	05	F14
0D	F3.4	04	F16
0C	F4.0	03	F19
0B	F4.8	02	F22
0A	F5.6	01	F26
09	F6.8	00	CLOSE

AE – Manual

The shutter speed (21 steps), iris (18 steps) and gain (8 steps) can be set freely by the user.

AE – Bright

The bright control function adjusts both the gain and iris using an internal algorithm according to a brightness level freely set by the user. Exposure is controlled by gain when dark and by iris when bright. As both gain and iris are fixed, this mode is used when exposing at a fixed camera sensitivity. When switching from Full Auto or Shutter Priority Mode to Bright Mode, the current status will be retained for a short period of time.
Only when the AE mode is set to “Full Auto” or “Shutter Priority,” the user can switch it to “Bright.”



Parameter	IRIS (F1.8) F No.	GAIN
17	F1.8	18 dB
16	F1.8	15 dB
15	F1.8	12 dB
14	F1.8	9 dB
13	F1.8	6 dB
12	F1.8	3 dB
11	F1.8	0 dB
10	F2.0	0 dB
0F	F2.4	0 dB
0E	F2.8	0 dB
0D	F3.4	0 dB
0C	F4.0	0 dB
0B	F4.8	0 dB
0A	F5.6	0 dB
09	F6.8	0 dB
08	F8.0	0 dB
07	F9.6	0 dB
06	F11	0 dB
05	F14	0 dB
04	F16	0 dB
03	F19	0 dB
02	F22	0 dB
01	F26	0 dB
00	CLOSE	0 dB

When switching from the Shutter Priority mode to the Bright mode, the shutter speed set in the Shutter Priority mode is maintained.

Gain Limit

Select the upper limit of the gain rise in FULL AUTO, SHUTTER Pri, SPOT LIGHT, and IRIS Pri modes. Select from among 0, 3, 6, 9, 12, 15, or 18 dB.

Exposure Compensation

Exposure compensation is a function which offsets the internal reference brightness level used in the AE mode by steps of 1.5 dB.

EXPOSURE	Comp Value	Step
0E	+10.5 dB	+7
0D	+9 dB	+6
0C	+7.5 dB	+5
0B	+6 dB	+4
0A	+4.5 dB	+3
09	+3 dB	+2
08	+1.5 dB	+1
07	0 dB	0
06	–1.5 dB	–1
05	–3 dB	–2
04	–4.5 dB	–3
03	–6 dB	–4
02	–7.5 dB	–5
01	–9 dB	–6
00	–10.5 dB	–7

Aperture Control

Aperture control is a function which adjusts the enhancement of the edges of objects in the picture. There are 16 levels of adjustment, starting from “no enhancement.” When shooting text, this control may help by making the text sharper.

Back Light Compensation

When the background of the subject is too bright, or when the subject is too dark due to shooting in the AE mode, back light compensation will make the subject appear clearer.

Camera ID

The ID can be set up to 65,536 (0000 to FFFF). As this will be memorized in the nonvolatile memory inside the camera, data will be saved, regardless of the “position preset.”

Checking the Location of the Camera for Signals from the IR Remote Commander

The supplied Remote Commander may not work correctly near inverter lighting fixtures. Good IR detection can be verified to determine proper camera location.
While the camera is being initialized after the power is turned on by connecting the camera to an AC outlet using the AC power adaptor and AC power cord, or by using a VISCA command, the camera detects whether or not the camera is able to receive infrared signals from the Remote Commander. You can check the result of this operation via the IR_ConditionInq command (see page 30).

When the installation location does not allow stable reception, try to install the camera farther away from the inverter lighting fixtures.

Others

Power On/Off
Powers the camera on and off. When the power is off, the camera is able to accept only the lowest level of VISCA Commands and POWER of the Remote Commander; the display and other features are turned off.

I/F clear
Clears the Command buffer of the camera. Clearing the buffer can also be carried out from the control application software when the power is on.

Address set
VISCA is a protocol, which normally can support a daisy chain of up to seven attached devices. Therefore, whenever a camera is connected for the first time, be sure to use the address set to confirm the address.

Memory (Position Preset)

Using the position preset function, 6 sets of camera shooting conditions can be stored and recalled.
This function allows you to achieve the desired status instantly without adjusting the following items each time:

- **Pan-Tilt position**
- **Zoom Position**
- **Focus Auto/Manual**
- **Focus Position**
- **AE Mode**
- **Gain Limit**
- **Shutter control parameters**
- **Bright Control**
- **Iris control parameters**
- **Gain control parameters**
- **Exposure Compensation On/Off**
- **Exposure Level**
- **Backlight Compensation On/Off**
- **White Balance Mode**
- **R/B Gain**
- **Aperture**

The settings are recalled when the power is turned on.

For setting items, see the "Initial Settings, Position Preset" section on page 13.

Note

When you turn the camera to the right or left beyond 25° with the camera pointed downward by 25°, the camera base may be captured by the lens, depending on the zoom position of the lens.

Initial Settings and Position Preset

The initial values are those set at the factory. Settings for items in Position presets 1 to 6 that will be retained even when the power to the camera is turned off are indicated by a “Yes,” those that will be lost are indicated by an “No.”

- When the power is turned on, the settings retained in POSITION 1 will be called up as the initial settings.
- When a CAM_Memory Reset command is sent, or a choice is made from POSITION 1 to 6 while the RESET button on the Remote Commander is being pressed, the settings selected will be used as the initial settings.
- Position preset 1 becomes VISCA command CAM_Memory memory number 0. Position presets 2 through 6 become VISCA command CAM_Memory memory numbers 1 through 5.

Category	Mode/Position	Initial settings	Position preset 1	Position presets 2 to 6
Pan/Tilt	Pan/Tilt Position	Home position	Yes	Yes
	Pan/Tilt Limit Position	movable-range maximum	Yes	No
Zoom	Zoom Position	Wide end	Yes	Yes
	D-Zoom Limit	x4	Yes	Yes
Focus	Focus Position	—	Yes	Yes
	Focus Auto/Manual	Auto	Yes	Yes
	Near Limit Setting	7600h	Yes	No
WB	WB Mode	Auto	Yes	Yes
	WB Data (Rgain, Bgain)	—	Yes	Yes
	One Push WB Data	—	Yes	No
AE	AE Mode	Full Auto	Yes	Yes
	AE Gain Limit	18 dB	Yes	No
	Shutter Position	1/60 sec (59.94/29.97), 1/50 sec (50/25)	Yes	Yes
	Iris Position	—	Yes	Yes
	Gain Position	—	Yes	Yes
	Bright Position	—	Yes	Yes
	Exposure Compensation On/Off	Off	Yes	Yes
	Exposure Compensation Amount	±0	Yes	Yes
	Backlight On/Off	Off	Yes	Yes
Apperture	Aperture Level	8	Yes	Yes
IR	IR_Receive On/Off	On	Yes	No
	IR_ReceiveReturn On/Off	Off	Yes	No
OSD	Display Information On/Off	On	Yes	No
Video System	Video Format	Rear panel SYSTEM SELECT: pos HD7V: 0 (1920×1080p/59.94) HD7V (CE): 8 (1920×1080p/50) HD3V: 3 (1280×720p/59.94) HD3V (CE): B (1280×720p/50)	No	No
	Color System	RGB	Yes	No
Memroy	Preset Memory	Same as the initial value setting	Yes	Yes

Notes

- The number of times data can be written to the EEPROM (by executing Position Preset) is limited.
- If you want the camera status and Pan/Tilt positions in effect before the camera is turned off to be retained when the power is turned OFF, then turned ON again, have the camera memorize those positions in POSITION 1.
- It takes approximately 2 seconds longer to memorize or erase settings in POSITION 1 than it does to memorize or erase settings in any other channel.
- Camera ID data will be saved regardless of the position preset.

Mode Condition

Basic settings

Mode / Command	Power Off[1]	Power On				
		IFC[2]	Initializing[3]	During displaying the menu	Other Status	Memory Command
Address Set	Yes	Yes	Yes	Yes	Yes	Yes
IF_Clear	Yes	Yes	Yes	Yes	Yes	Yes
CAM_Power On	Yes	No	No	Yes	Yes	No
CAM_Power Off	Yes	No	No	Yes	Yes	No
IR_Receive On/Off	No	No	No	Yes[4]	Yes	No
IR_ReceiveReturn On/Off	No	No	No	Yes	Yes	No
CAM Version Inq	Yes	Yes	Yes	Yes	Yes	Yes
CAM_Power Inq.	Yes	Yes	Yes	Yes	Yes	Yes
BlockInquiry	No	No	No	Yes	Yes	No
InquiryCommand (and similar commands)	No	No	No	Yes	Yes	No

1) DC power is being supplied, but the camera has been turned off by a VISCA command.
2) The period from the time IF Clear is sent, until the Reply Packet is returned.
3) The period from the time DC power is turned on or the camera is turned on via a VISCA command, and the camera subsequently finishes the pan/tilt reset operation and stops at the Home position, until the video signal is output. Or the period from the time the CAM Power ON command is sent, until Completion is returned.
4) The camera does not receive the operation sent from the Remote Commander.

Zoom/Focus

Mode / Command	Power Off[1]	Power On						
		IFC[2]	Initializing[3]	Zoom Direct	Focus Direct	AF ON	During displaying the menu	Memory Recall
CAM_Zoom Tele/Wide/Stop [VISCA]	No	No	No	No	Yes	Yes	No[4]	No
CAM_Zoom Tele/Wide/Stop [RC]	No	No	No	No	Yes	Yes	No[4]	No
CAM_Zoom Direct	No	No	No	Yes	Yes	Yes	No[4]	No
D-Zoom Limit	No	No	No	No	Yes	Yes	No[4]	No
CAM_Focus Far/Near/Stop [VISCA]	No	No	No	Yes	No	No	No[4]	No
CAM_Focus Far/Near/Stop [RC]	No	No	No	Yes	No	No	No[4]	No
CAM_Focus Direct	No	No	No	Yes	Yes	No	No[4]	No
CAM_Focus Mode (Auto/Manual)	No	No	No	Yes	No	Yes	No[4]	No
CAM_Focus One Push Trigger	No	No	No	Yes	No	No	No[4]	No
CAM_Focus Infinity	No	No	No	Yes	No	Yes	No[4]	No
CAM_Focus Near Limit	No	No	No	Yes	No	Yes	No[4]	No

1) DC power is being supplied, but the camera has been turned off by a VISCA command.
2) The period from the time IF Clear is sent, until the Reply Packet is returned.
3) The period from the time DC power is turned on or the camera is turned on via a VISCA command, and the camera subsequently finishes the pan/tilt reset operation and stops at the Home position, until the video signal is output. Or the period from the time the CAM Power ON command is sent, until Completion is returned.
4) The camera is not limited in operation due to the menus. But the camera follows the operational restrictions of the current mode while the camera is receiving the command in each mode.

White Balance

Mode / Command	Power Off[1]	Power On								
		IFC[2]	Initializing[3]	White balance mode					During displaying the menu	Memory Recall
				Auto	Indoor	Outdoor	One Push	Manual		
CAM_WB Auto/Indoor/Outdoor/ OnePhshWB/Manual	No	No	No	Yes	Yes	Yes	Yes	Yes	No[4]	No
CAM_WB One Push Trigger	No	No	No	No	No	No	Yes[5]	No	No[4]	No
CAM_WB R(B) Gain Reset/Up/Down/Direct	No	No	No	No	No	No	No	Yes	No[4]	No

1) DC power is being supplied, but the camera has been turned off by a VISCA command.
2) The period from the time IF Clear is sent, until the Reply Packet is returned.
3) The period from the time DC power is turned on or the camera is turned on via a VISCA command, and the camera subsequently finishes the pan/tilt reset operation and stops at the Home position, until the video signal is output. Or the period from the time the CAM Power ON command is sent, until Completion is returned.
4) The camera is not limited in operation due to the menus. But the camera follows the operational restrictions of the current mode during IFC executing/initializing/white balance mode operation.
5) Commands are ignored during a One Push AWB operation.

Exposure

Mode / Command	Power Off[1]	Power Off									
		IFC[2]	Initializing[3]	Exposure mode						During displaying the menu	Memory Recall
				Full Auto	Bright	Shutter Pri	Iris Pri	SPOT Light	Manual		
CAM_AE Full Auto/Manual/Shutter Pri/ Iris Pri/Spot Light	No	No	No	Yes	Yes[4]	Yes	Yes	Yes	Yes	No[5]	No
CAM_AE Bright	No	No	No	Yes	Yes	Yes	No	No	No	No[5]	No
CAM_Slow Shutter Limit ON/OFF	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No[5]	No
CAM_Shutter Reset/Up/Down/Direct	No	No	No	No	No	Yes	No	No	Yes	No[5]	No
CAM_Iris Reset/Up/Down/Direct	No	No	No	No	No	No	Yes	No	Yes	No[5]	No
CAM_Gain Reset/Up/Down/Direct	No	No	No	No	No	No	No	No	Yes	No[5]	No
CAM_Bright Reset/Up/Down/Direct	No	No	No	No	Yes	No	No	No	No	No[5]	No
CAM_ExComp On/Off	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No[5]	No
CAM_ExComp Reset/Up/Down/Direct[6]	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No[5]	No
CAM_Backlight On/Off	No	No	No	Yes	No	No	No	Yes	No	No[5]	No

1) DC power is being supplied, but the camera has been turned off by a VISCA command.
2) The period from the time IF Clear is sent, until the Reply Packet is returned.
3) The period from the time DC power is turned on or the camera is turned on via a VISCA command, and the camera subsequently finishes the pan/tilt reset operation and stops at the Home position, until the video signal is output. Or the period from the time the CAM Power ON command is sent, until Completion is returned.
4) Yes: Only when the camera changes to BRIGHT mode from Full Auto or SHUTTER Pri mode.
5) The camera is not limited in operation due to the menus. But the camera follows the operational restrictions of the current mode during IFC executing/initializing/exposure mode operation.
6) No: This is not allowed when EX-COMP is set to OFF.

Effect

Mode / Command	Power Off[1]	Power On			
		IFC[2]	Initializing[3]	During displaying the menu	Memory Recall
CAM_Aperture Reset/Up/Down/Direct	No	No	No	No[4]	No
Display info. (ON/OFF)	No	No	No	No[4]	No

1) DC power is being supplied, but the camera has been turned off by a VISCA command.
2) The period from the time IF Clear is sent, until the Reply Packet is returned.
3) The period from the time DC power is turned on or the camera is turned on via a VISCA command, and the camera subsequently finishes the pan/tilt reset operation and stops at the Home position, until the video signal is output. Or the period from the time the CAM Power ON command is sent, until Completion is returned.
4) The camera is not limited in operation due to the menus. But the camera follows the operational restrictions of the current mode during IFC executing/initializing.

Pan/Tilt

Command \ Mode	Transmit device	Power Off[1]	Power On															
			IFC[2]	Initia-lizing[3]	Zoom (Direct)	Focus (Direct)	Pan/Tilt normal status										During displaying the menu	Position detection error
							Pan/tilt movement according to the command		Absolute Position execution	Relative Position execution	Home execution		Reset execution		Memory Recall			
					Common	Common	VISCA	RC	VISCA	VISCA	VISCA	RC	VISCA	RC	VISCA	RC		
Pan-tiltDrive Up/Down/Left/Right/UpLeft/UpRight/DownLeft/DownRight	VISCA	No	No	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes
	RC	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes
Pan-tiltDrive Stop	VISCA	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	Yes
Pan-tiltDrive AbsolutePosition	VISCA	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No [5]	No
Pan-tiltDrive RelativePosition	VISCA	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No [5]	Yes
Pan-tiltDrive Home	VISCA	No	No	No	Yes	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No
	RC	No	No	No	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No	No	No
Pan-tiltDrive Reset	VISCA	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No [5]	Yes
	RC	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No [5]	Yes
Pan-tiltLimitSet LimitSet	VISCA	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No [5]	No
Pan-tiltLimitSet LimitClear	VISCA	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No [5]	No
Memory Set	Common	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No [5]	No
Memory Reset	Common	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No [5]	No
Memory Recall	VISCA	No	No	No	No [6]	No [7]	Yes	Yes	No	No	No	No	No	No	Yes	Yes	No [5]	No
	RC	No	No	No	No [6]	No [7]	Yes	No	No	No	No	No	No	No	Yes	Yes	No [5]	No

1) DC power is being supplied, but the camera has been turned off by a VISCA command.
2) The period from the time IF Clear is sent, until the Reply Packet is returned.
3) The period from the time DC power is turned on or the camera is turned on via a VISCA command, and the camera subsequently finishes the pan/tilt reset operation and stops at the Home position, until the video signal is output. Or the period from the time the CAM Power ON command is sent, until Completion is returned.
4) The pan/tilt operation works by Pan-tiltDrive Up/Down/Left/Right/UpLeft/UpRight/DownLeft/DownRight commands.
5) The camera follows the operational restrictions of the mode in effect during zoom/focus or pan/tilt operations.
6) Yes: while the camera operates in Tele/Wide zoom mode.
7) Yes: while the camera operates in Far/Near focus mode.

Command List

VISCA[1] RS-232C Commands

Use of RS-232C control software which has been developed based upon this command list may cause malfunction or damage to hardware and software. Sony Corporation is not liable for any such damage.

Overview of VISCA

In VISCA, the device producing the commands, for example, a computer, is called the controller, while the device receiving the commands, such as an EVI-HD7V/HD3V, is called the peripheral device. The EVI-HD7V/HD3V serves as a peripheral device in VISCA. In VISCA, up to seven peripheral devices like the EVI-HD7V/HD3V can be connected to one controller using communication conforming to the RS-232C standard. The parameters of RS-232C are as follows.

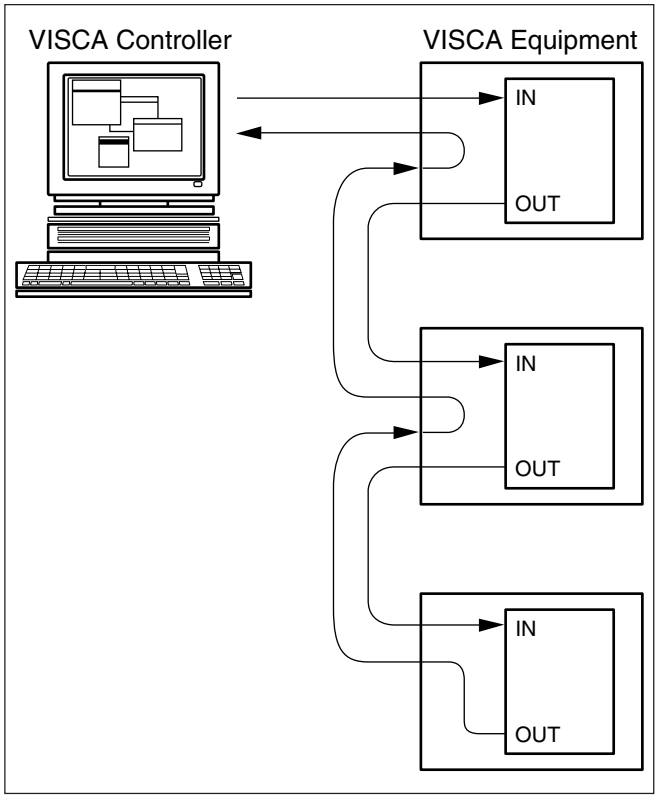
- Communication speed: 9,600 bps/38,400 bps
- Data bits : 8
- Start bit : 1
- Stop bit : 1
- Non parity

Flow control using XON/XOFF and RTS/CTS, etc., is not supported.

Peripheral devices are connected in a daisy chain. As shown in Fig. 1, the actual internal connection is a one-direction ring, so that messages return to the controller via the peripheral devices. The devices on the network are assigned addresses.
The address of the controller is fixed at 0. The addresses of the peripheral devices are 1, 2, 3 ... in order, starting from the one nearest the controller. The address of the peripheral device is set by sending address commands during the initialization of the network.

The VISCA devices each have a VISCA IN and VISCA OUT connector.
Set the DSR input (the DTR output of the controller) of VISCA IN to H when controlling VISCA equipment from the controller.

Fig. 1 VISCA network configuration



1) VISCA is a protocol which controls consumer camcorders developed by Sony. “VISCA” is a trademark of Sony Corporation.

VISCA Communication Specifications

VISCA packet structure

The basic unit of VISCA communication is called a packet (Fig. 2). The first byte of the packet is called the header and comprises the sender's and receiver's addresses. For example, the header of the packet sent to the EVI-HD7V/HD3V assigned address 1 from the controller (address 0) is hexadecimal 81H. The packet sent to the EVI-HD7V/HD3V assigned address 2 is 82H. In the command list, as the header is 8X, input the address of the EVI-HD7V/HD3V at X. The header of the reply packet from the EVI-HD7V/HD3V assigned address 1 is 90H. The packet from the EVI-HD7V/HD3V assigned address 2 is A0H.
Some of the commands for setting EVI-HD7V/HD3V units can be sent to all devices at one time (broadcast). In the case of broadcast, the header should be hexadecimal 88H.
When the terminator is FFH, it signifies the end of the packet.

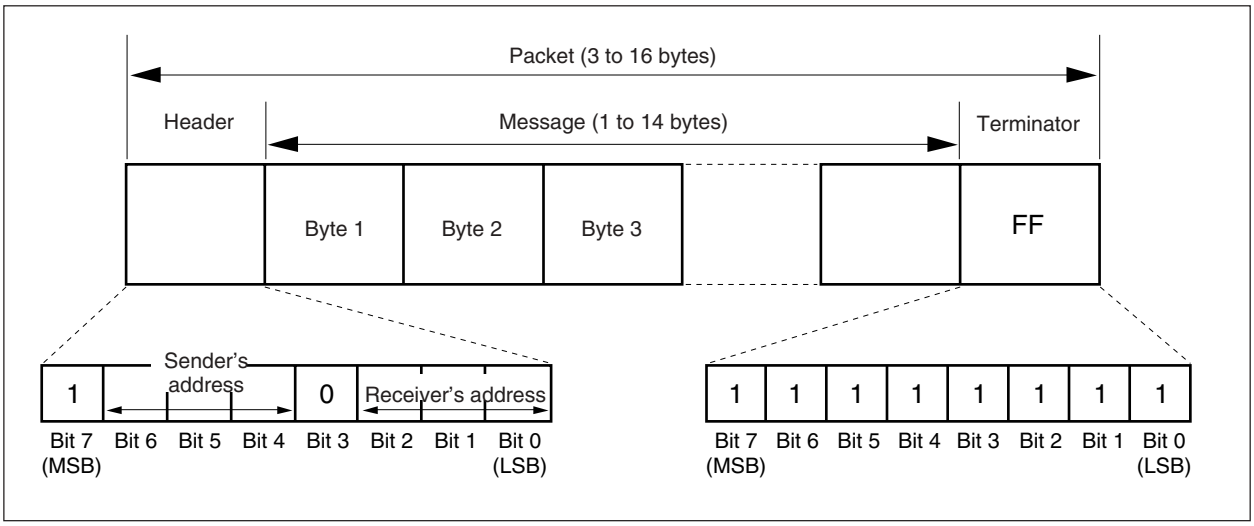


Fig. 2 Packet structure

Note

Fig. 2 shows the packet structure, while Fig. 3 shows the actual waveform. Data flow will take place with the LSB first.

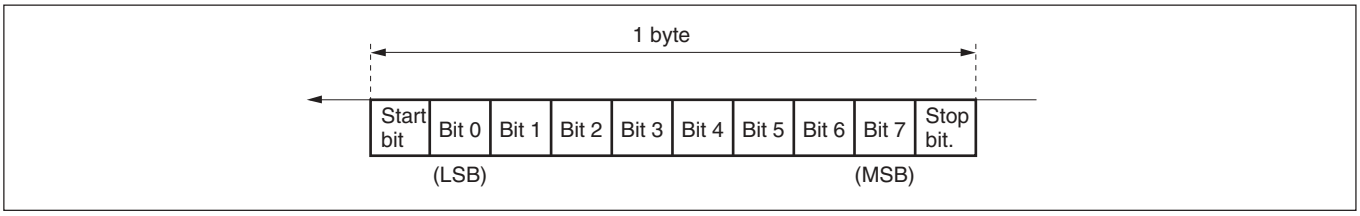
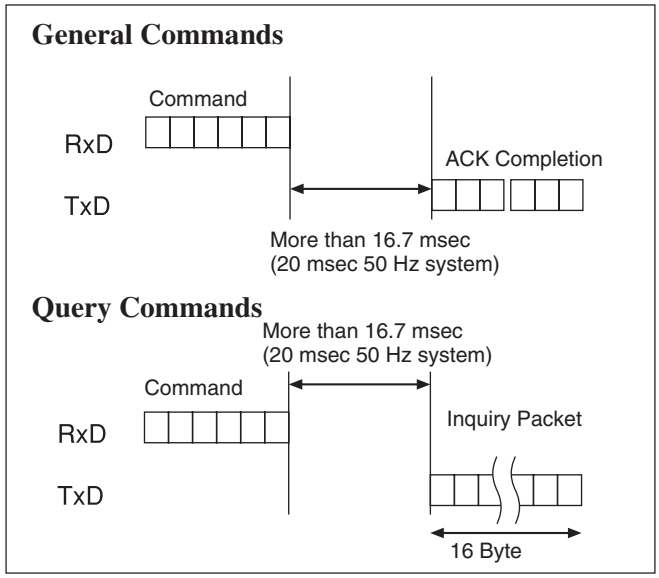


Fig. 3 Actual waveform for 1 byte.

Timing Chart

As VISCA command processing can only be carried out one time per vertical cycle, it takes the minimum time of one V cycle for an ACK/Inquiry Packet to be returned after the command.
Even if the transmission time between the ACK/Inquiry Packet and the next command is shorter than the duration of one V cycle, the command will not be received until the ACK/Inquiry Packet is sent.



Command and inquiry

● **Command**
Sends operational commands to the EVI-HD7V/HD3V.

● **Inquiry**
Used for inquiring about the current state of the EVI-HD7V/HD3V.

	Command Packet	Note
Inquiry	8X QQ RR ... FF	QQ[1] = Command/Inquiry, RR[2] = category code

[1] QQ = 01 (Command), 09 (Inquiry)
[2] RR = 00 (Interface), 04 (camera 1), 06 (Pan/Tilter)

X = 1 to 7: EVI-HD7V/HD3V address

Responses for commands and inquiries

● **ACK message**
Returned by the EVI-HD7V/HD3V when it receives a command. No ACK message is returned for inquiries.

● **Completion message**
Returned by the EVI-HD7V/HD3V when execution of commands or inquiries is completed. In the case of inquiry commands, it will contain reply data for the inquiry after the 3rd byte of the packet. If the ACK message is omitted, the socket number will contain a 0.

	Reply Packet	Note
Ack	X0 4Y FF	Y = socket number
Completion (commands)	X0 5Y FF	Y = socket number
Completion (Inquiries)	X0 5Y ... FF	Y = socket number

X = 9 to F: EVI-HD7V/HD3V address + 8

● **Error message**
When a command or inquiry command could not be executed or failed, an error message is returned instead of the completion message.

Error Packet	Description
X0 6Y 02 FF	Syntax Error
X0 6Y 03 FF	Command buffer full
X0 6Y 04 FF	Command cancelled
X0 6Y 05 FF	No socket (to be cancelled)
X0 6Y 41 FF	Command not executable

X = 9 to F: EVI-HD7V/HD3V address + 8, Y = socket number

Socket number

When command messages are sent to the EVI-HD7V/HD3V, it is normal to send the next command message after waiting for the completion message or error message to return. However to deal with advanced uses, the EVI-HD7V/HD3V has two buffers (memories) for commands, so that up to two commands including the commands currently being executed can be received. When the EVI-HD7V/HD3V receives commands, it notifies the sender which command buffer was used using the socket number of the ACK message.
As the completion message or error message also has a socket number, it indicates which command has ended.
Even when two command buffers are being used at any one time, an EVI-HD7V/HD3V management command and some inquiry messages can be executed. The ACK message is not returned for these commands and inquiries, and only the completion message of socket number 0 is returned.
The following three commands use two sockets during execution of each command that is sent. The EVI-HD7V/HD3V cannot receive other requests during execution of these commands. In addition, these commands cannot be executed during operation of other commands.
• CAM_AE_Gain_Limit
• SYS_Menu
• CAM_Memory Recall when Limit is updated

Command execution cancel

To cancel a command which has already been sent, send the Cancel command as the next command. To cancel one of any two commands which have been sent, use the cancel message.

	Cancel Packet	Note
Cancel	8X 2Y FF	Y = socket number

X = 1 to 7: EVI-HD7V/HD3V address, Y = socket number

The Command canceled error message will be returned for this command, but this is not a fault. It indicates that the command has been canceled.

VISCA Device Setting Command

Before starting control of the EVI-HD7V/HD3V, be sure to send the Address command and the IF_Clear command using the broadcast function.

For VISCA network administration

● **Address Set**
Sets an address of a peripheral device. Use when initializing the network, and receiving the following network change message.

	Command	Reply
Address Set	88 30 01 FF	88 30 0w FF

w = 2 to 7: EVI-HD7V/HD3V address + 8

● **Network Change**
Sent from the peripheral device to the controller when a device is removed from or added to the network. The address must be re-set when this message is received.

	Received Packet
Network Change	X0 38 FF

X = 9 to F: EVI-HD7V/HD3V address + 8

VISCA interface command

● **IF_Clear**
Clears the command buffers in the EVI-HD7V/HD3V and cancels the command currently being executed.

	Command Packet	Reply Packet	Note
IF_Clear	8X 01 00 01FF	Y0 50 FF	
IF_Clear (broadcast)	88 01 00 01 FF	88 01 00 01 FF	

X = 1 to 7: EVI-HD7V/HD3V address
Y = 9 to F: EVI-HD7V/HD3V address +8

VISCA interface and inquiry

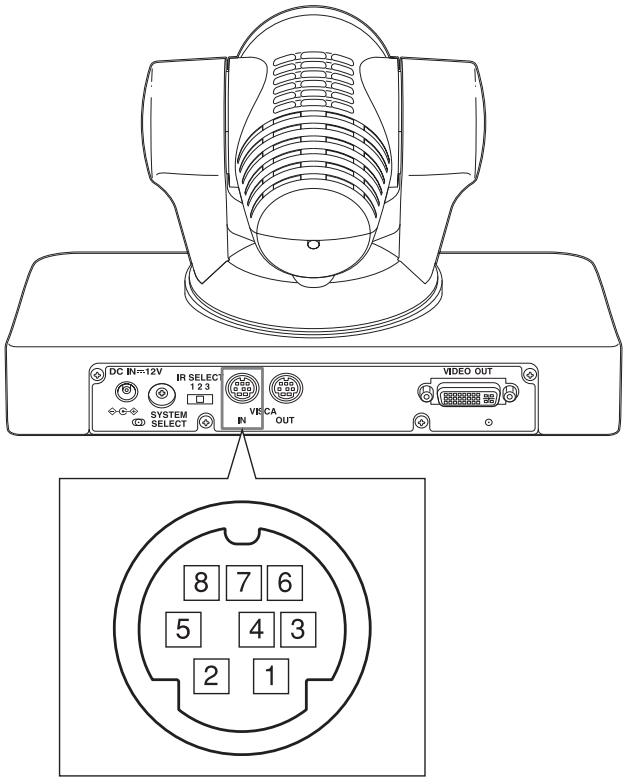
● **CAM_VersionInq**
Returns information on the VISCA interface.

Inquiry	Inquiry Packet	Reply Packet	Description
CAM_VersionInq	8X 09 00 02 FF	Y0 50 GG GG HH HH JJ JJ KK FF	GGGG = Vender ID (0010: Sony) HHHH = Model ID 0508: EVI-HD7V 0509: EVI-HD3V JJJJ = ROM revision KK = Maximum socket # (02)

X = 1 to 7: EVI-HD7V/HD3V address (For inquiry packet)
X = 9 to F: EVI-HD7V/HD3V address +8 (For reply packet)

Pin assignment

VISCA IN connector (mini-DIN 8-pin, female)



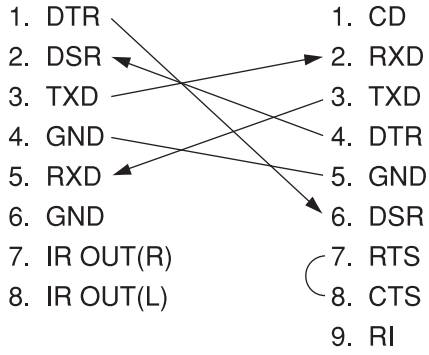
VISCA IN

No	Pins
1	DTR IN*
2	DSR IN*
3	TXD IN
4	GND
5	RXD IN
6	GND
7	IR OUT (R)**
8	IR OUT (L)**

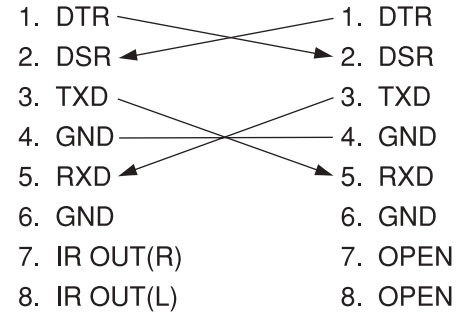
* The “IN” in the function names for pins 1 and 2 (“DTR IN” and “DSR IN”) are in reference to being within the VISCA IN connector. For details on signal direction, see the diagrams to the right.

** You can change ON/OFF of IR OUT of pins 7 and 8 using the BOTTOM switch (see page 7).

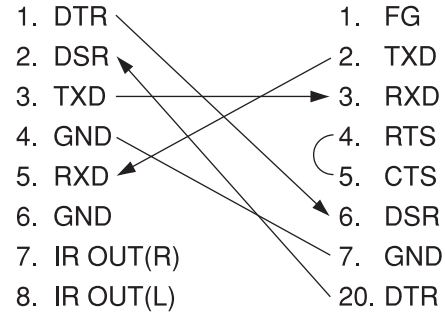
• EVI-HD7V/HD3V Windows D-sub 9 pin



• EVI-HD7V/HD3V EVI Camera or Mini DIN 8 pin serial



• EVI-HD7V/HD3V Windows D-sub 25 pin



VISCA Command/ACK Protocol

Command	Command Message	Reply Message	Comments
General Command	81 01 04 38 02 FF (Example)	90 41 FF (ACK)+90 51 FF (Completion) 90 42 FF 90 52 FF	Returns ACK when a command has been accepted, and Completion when a command has been executed.
	81 01 04 38 FF (Example)	90 60 02 FF (Syntax Error)	Accepted a command which is not supported or a command lacking parameters.
	81 01 04 38 02 FF (Example)	90 60 03 FF (Command Buffer Full)	There are two commands currently being executed, and the command could not be accepted.
	81 01 04 08 02 FF (Example)	90 61 41 FF (Command Not Executable) 90 62 41FF	Could not execute the command in the current mode.
Inquiry Command	81 09 04 38 FF (Example)	90 50 02 FF (Completion)	ACK is not returned for the inquiry command.
	81 09 05 38 FF (Example)	90 60 02 FF (Syntax Error)	Accepted an incompatible command.
Address Set	88 30 01 FF	88 30 0w FF	w: Returned the device address to +1. (2 to 8)
IF_Clear(Broadcast)	88 01 00 01 FF	88 01 00 01 FF	Returned the same command.
IF_Clear (For x)	8x 01 00 01 FF	z0 50 FF (Completion)	ACK is not returned for this command.
Command Cancel	8x 2y FF (y:Socket No.)	z0 6y 04 FF (Command Canceled)	Returned when the command of the socket specified is canceled. Completion for the command canceled is not returned.
		z0 6y 05 FF (No Socket)	Returned when the command of the specified socket has already been completed or when the socket number specified is wrong.

z = Device address + 8

VISCA Camera-Issued Messages

ACK/Completion Messages

	Command Messages	Comments
ACK	z0 4y FF (y:Socket No.)	Returned when the command is accepted.
Completion	z0 5y FF (y:Socket No.)	Returned when the command has been executed.

z = Device address + 8

Error Messages

	Command Messages	Comments
Syntax Error	z0 60 02 FF	Returned when the command format is different or when a command with illegal command parameters is accepted.
Command Buffer Full	z0 60 03 FF	Indicates that two sockets are already being used (executing two commands) and the command could not be accepted when received.
Command Canceled	z0 6y 04 FF (y:Socket No.)	Returned when a command which is being executed in a socket specified by the cancel command is canceled. The completion message for the command is not returned.
No Socket	z0 6y 05 FF (y:Socket No.)	Returned when no command is executed in a socket specified by the cancel command, or when an invalid socket number is specified.
Command Not Executable	z0 6y 41 FF (y:Execution command Socket No. Inquiry command:0)	Returned when a command cannot be executed due to current conditions. For example, when commands controlling the focus manually are received during auto focus.

z = Device address + 8

Network Change Message

	Command Message	Comments
Network Change	z0 38 FF	Issued when power is being routed to the camera, or when the VISCA device is connected to or disconnected from the VISCA OUT connector.

z = Device address + 8

EVI-HD7V/HD3V Commands

EVI-HD7V/HD3V Command List (1/3)

Command Set	Command	Command Packet	Comments
AddressSet	Broadcast	88 30 01 FF	Address setting
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
CommandCancel		8x 2p FF	p: Socket No.(=1or2)
CAM_Power	On	8x 01 04 00 02 FF	Power ON/OFF
	Off	8x 01 04 00 03 FF	
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele(Standard)	8x 01 04 07 02 FF	
	Wide(Standard)	8x 01 04 07 03 FF	
	Tele(Variable)	8x 01 04 07 2p FF	p=0 (Low) to 7 (High)
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_DZoom	D-Zoom Limit	8x 01 04 26 0p FF	p=0 (x1), 1 (x1.5), 2 (x2), 3 (x4)
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far(Standard)	8x 01 04 08 02 FF	
	Near(Standard)	8x 01 04 08 03 FF	
	Far(Variable)	8x 01 04 08 2p FF	p=0 (Low) to 7 (High)
	Near(Variable)	8x 01 04 08 3p FF	
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position
	Auto Focus	8x 01 04 38 02 FF	AF ON/OFF
	Manual Focus	8x 01 04 38 03 FF	
	Auto/Manual	8x 01 04 38 10 FF	
	One Push Trigger	8x 01 04 18 01 FF	One Push AF Trigger
	Infinity	8x 01 04 18 02 FF	Forced infinity
	Near Limit	8x 01 04 28 0p 0q 0r 0s FF	pqrs: Focus Near Limit Position *The lower 1 byte (rs) is fixed at 00.
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: Zoom Position tuvw: Focus Position
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	Indoor	8x 01 04 35 01 FF	Indoor mode
	Outdoor	8x 01 04 35 02 FF	Outdoor mode
	One Push WB	8x 01 04 35 03 FF	One Push WB mode
	Manual	8x 01 04 35 05 FF	Manual Control mode
	One Push Trigger [1)]	8x 01 04 10 05 FF	One Push WB Trigger
CAM_RGain	Reset	8x 01 04 03 00 FF	Manual Control of R Gain
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	pq: R Gain
CAM_BGain	Reset	8x 01 04 04 00 FF	Manual Control of B Gain
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	pq: B Gain

EVI-HD7V/HD3V Command List (2/3)

Command Set	Command	Command Packet	Comments
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright [2)]	8x 01 04 39 0D FF	Bright Mode (Manual control)
	CAM SpotLight	8x 01 04 39 10 FF	Spot light mode
CAM_AE_Gain_Limit	Direct	8x 01 04 2C 0p FF	Gain Limit Setting in AE mode (Full Auto, Shutter priority, Iris priority, Spot light) 0p: Limit Gain Position (from 0 to 18 dB)
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting
	Up	8x 01 04 0A 02 FF	
	Down	8x 01 04 0A 03 FF	
	Direct	8x 01 04 4A 00 00 0p 0q FF	pq: Shutter Position
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting
	Up	8x 01 04 0B 02 FF	
	Down	8x 01 04 0B 03 FF	
	Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	pq: Gain Position
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting
	Up	8x 01 04 0D 02 FF	
	Down	8x 01 04 0D 03 FF	
	Direct	8x 01 04 4D 00 00 0p 0q FF	pq: Bright Position
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation ON/OFF
	Off	8x 01 04 3E 03 FF	
	Reset	8x 01 04 0E 00 FF	Exposure Compensation Amount Setting
	Up	8x 01 04 0E 02 FF	
	Down	8x 01 04 0E 03 FF	
	Direct	8x 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position
CAM_Backlight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
	Off	8x 01 04 33 03 FF	
CAM_Aperture	Reset	8x 01 04 02 00 FF	Aperture Control
	Up	8x 01 04 02 02 FF	
	Down	8x 01 04 02 03 FF	
	Direct	8x 01 04 42 00 00 0p 0q FF	pq: Aperture Gain
CAM_Memory	Reset [3)]	8x 01 04 3F 00 0p FF	p: Memory Number (=0 to 5) Corresponds to 1 to 6 on the Remote Commander.
	Set [3)]	8x 01 04 3F 01 0p FF	
	Recall [3), 4)]	8x 01 04 3F 02 0p FF	
CAM_IDWrite		8x 01 04 22 0p 0q 0r 0s FF	pqrs: Camera ID (=0000 to FFFF)
SYS_Menu	Off	8x 01 06 06 03 FF	Turns off the menu screen.

EVI-HD7V/HD3V Command List (3/3)

Command Set	Command	Command Packet	Comments
VideoSystem SET [5]		8x 01 06 35 00 0p FF	p: 0 Video format: 1920×1080p/59.94 HD7V: Yes HD3V: No (59.94 Hz system) Output connetor: DVI-D p: 1 Video format: 1920×1080p/29.97 HD7V: Yes HD3V: No (59.94 Hz system) Output connetor: DVI-D p: 2 Video format: 1920×1080i/59.94 HD7V: Yes HD3V: No (59.94 Hz system) Output connetor: DVI-D p: 3 Video format: 1280×720p/59.94 HD7V: Yes HD3V: Yes (59.94 Hz system) Output connetor: DVI-D p: 4 Video format: 1280×720p/29.97 HD7V: Yes HD3V: Yes (59.94 Hz system) Output connetor: DVI-D p: 5 Video format: 640×480p/59.94 (Letter Box) HD7V: Yes HD3V: Yes (59.94 Hz system) Output connetor: DVI-D p: 8 Video format: 1920×1080p/50 HD7V: Yes HD3V: No (50 Hz system) Output connetor: DVI-D p: 9 Video format: 1920×1080p/25 HD7V: Yes HD3V: No (50 Hz system) Output connetor: DVI-D p: A Video format: 1920×1080i/50 HD7V: Yes HD3V: No (50 Hz system) Output connetor: DVI-D p: B Video format: 1280×720p/50 HD7V: Yes HD3V: Yes (50 Hz system) Output connetor: DVI-D p: C Video format: 1280×720p/25 HD7V: Yes HD3V: Yes (50 Hz system) Output connetor: DVI-D
IR_Receive	On	8x 01 06 08 02 FF	IR(remote commander) receive ON/OFF
	Off	8x 01 06 08 03 FF	
	On/Off	8x 01 06 08 10 FF	
IR_ReceiveReturn	On	8x 01 7D 01 03 00 00 FF	IR (remote commander) receive message via the VISCA communication ON/OFF
	Off	8x 01 7D 01 13 00 00 FF	For contents of messages, see page 30.
Information Display	On	8x 01 7E 01 18 02 FF	ON/OFF of the Operation status display of One Push Trigger of CAM_Memory and CAM_WB
	Off	8x 01 7E 01 18 03 FF	
Color system	RGB	8x 01 7E 01 03 00 00 FF	Color-reproduction format setting for VIDEO signals
	YPbPr	8x 01 7E 01 03 00 01 FF	
Pan-tiltDrive	Up [3]	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed 0 x01 (low speed) to 0 x18 (high speed) WW: Tilt Speed 0 x 01 (low speed) to 0 x14 (high speed) YYYY: Pan Position FA60 to 05A0 (center 0000) ZZZZ: Tilt Position FE98 to 0168 (center 0000) See page 37.
	Down [3]	8x 01 06 01 VV WW 03 02 FF	
	Left [3]	8x 01 06 01 VV WW 01 03 FF	
	Right [3]	8x 01 06 01 VV WW 02 03 FF	
	UpLeft [3]	8x 01 06 01 VV WW 01 01 FF	
	UpRight [3]	8x 01 06 01 VV WW 02 01 FF	
	DownLeft [3]	8x 01 06 01 VV WW 01 02 FF	
	DownRight [3]	8x 01 06 01 VV WW 02 02 FF	
	Stop [3]	8x 01 06 01 VV WW 03 03 FF	
	AbsolutePosition	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	RelativePosition	8x 01 06 03 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	
Pan-tiltLimitSet	LimitSet	8x 01 06 07 00 0W 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	W: 1 UpRight 0: DownLeft YYYY: Pan Limit Position FA60 to 05A0 (center 0000) ZZZZ: Tilt Position FE98~0168 (center 0000)
	LimitClear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF	

1) After an ACK to a One Push White Balance Trigger is sent until the operation is completed, “Not Executable” is sent as a reply when any other commands are received.
2) Bright can be set only in Full Auto mode or Shutter Priority mode.
3) When the menu is displayed, this operation is ignored.
4) When other commands are received after a Completion notification for the Recall command is sent, “Command not executable” may be returned for a maximum of 240 msec due to internal processing. In this case, please transmit the command again.
5) Can be configured when the SYSTEM SELECT switch at the rear of the camera is set to position 7.
Use one of the following methods to apply the settings.
• Turn off DC power, and turn it on again.
• Turn off power using the IR remote commander, and turn it on again.
• Send CAM_Power On and Off commands.

EVI-HD7V/HD3V Inquiry Command List (1/2)

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off (Standby)
		y0 50 04 FF	Internal power circuit error
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_DZoomLimitInq	8x 09 04 26 FF	y0 50 0p FF	p= 2 (x1), 1 (x1/5), 2 (x2), 3 (x4)
CAM_FocusModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
		y0 50 03 FF	Manual Focus
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_FocusNearLimitInq	8x 09 04 28 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Near Limit Position *The lower 1 byte (rs) is fixed at 00.
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	In Door
		y0 50 02 FF	Out Door
		y0 50 03 FF	One Push WB
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		y0 50 0B FF	Iris Priority
		y0 50 0D FF	Bright
		y0 50 10 FF	Spot Light
CAM_AE Gain Limit PosInq	8x 09 04 2C FF	Y0 50 0p FF	p:AE Gain Limit Position
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompModeInq	8x 09 04 3E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_BacklightModeInq	8x 09 04 33 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain
CAM_MemoryInq	8x 09 04 3F FF	y0 50 0p FF	p: Memory number last operated.
SYS_MenuModeInq	8x 09 06 06 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: Camera ID
CAM_VersionInq	8x 09 00 02 FF	y0 50 00 01 mn pq rs tu vw FF	mnpq: Model Code (HD7V:0508/HD3V:0509) rstu: ROM version vw: Socket Number (=02) See page 21.
Information Display	8x 09 7E 01 18 FF	y0 50 02 FF	On
		y0 50 03 FF	Off

EVI-HD7V/HD3V Inquiry Command List (2/2)

Inquiry Command	Command Packet	Inquiry Packet	Comments				
Video SystemInq	8x 09 06 23 FF		Video format	HD7V	HD3V		Output connector
		y0 50 00 FF	1920×1080p/59.94	Yes	No	59.94 Hz system	DVI-D
		y0 50 01 FF	1920×1080p/29.97	Yes	No		
		y0 50 02 FF	1920×1080i/59.94	Yes	No		
		y0 50 03 FF	1280×720p/59.94	Yes	Yes		
		y0 50 04 FF	1280×720p/29.97	Yes	Yes		
		y0 50 05 FF	640×480p/59.94 (Letter Box)	Yes	Yes		
		y0 50 08 FF	1920×1080p/50	Yes	No	50 Hz system	
		y0 50 09 FF	1920×1080p/25	Yes	No		
		y0 50 0A FF	1920×1080i/50	Yes	No		
		y0 50 0B FF	1280×720p/50	Yes	Yes		
		y0 50 0C FF	1280×720p/25	Yes	Yes		
Next Power ON Video SystemInq [1]	8x 09 06 33 FF		Video format	HD7V	HD3V		Output connector
		y0 50 00 FF	1920×1080p/59.94	Yes	No	59.94 Hz system	DVI-D
		y0 50 01 FF	1920×1080p/29.97	Yes	No		
		y0 50 02 FF	1920×1080i/59.94	Yes	No		
		y0 50 03 FF	1280×720p/59.94	Yes	Yes		
		y0 50 04 FF	1280×720p/29.97	Yes	Yes		
		y0 50 05 FF	640×480p/59.94 (Letter Box)	Yes	Yes		
		y0 50 08 FF	1920×1080p/50	Yes	No	50 Hz system	
		y0 50 09 FF	1920×1080p/25	Yes	No		
		y0 50 0A FF	1920×1080i/50	Yes	No		
		y0 50 0B FF	1280×720p/50	Yes	Yes		
		y0 50 0C FF	1280×720p/25	Yes	Yes		
IR_Receive	8x 09 06 08 FF	y0 50 02 FF	On				
		y0 50 03 FF	Off				
IR_ReceiveReturn		y0 07 7D 01 04 00 FF	Power ON/OFF				
		y0 07 7D 01 04 07 FF	Zoom tele/wide				
		y0 07 7D 01 04 38 FF	AF On/Off				
		y0 07 7D 01 04 33 FF	CAM_Backlight				
		y0 07 7D 01 04 3F FF	CAM_Memory				
		y0 07 7D 01 06 01 FF	Pan_tiltDrive				
IR_ConditionInq	8x 09 06 34 FF	y0 50 00 FF	Stable reception from the IR Remote Commander				
		y0 50 01 FF	Unstable reception from the IR Remote Commander				
		y0 50 02 FF	Impossible to detect the infrared signals from the Remote Commander because the camera is turned on by the Remote Commander.				
Pan-tiltMaxSpeedInq	8x 09 06 11 FF	y5 50 ww zz FF	ww = Pan Max Speed xx = Tilt Max Speed				
Pan-tiltPosInq	8x 09 06 12 FF	y5 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww = Pan Position zzzz = Tilt Position Speed See page 37.				
Pan-tiltModeInq	8x 09 06 10 FF	y5 50 pq rs FF	pqrs: Pan-tilt Status See page 37.				
Color system Inq	8x 09 7E 01 03 FF	y0 50 00 FF	RGB				
		y0 50 01 FF	YPbPr				
Cooling fan condirion Inq	8x 09 7E 01 38 FF	y0 50 00 FF	Working				
		y0 50 01 FF	Stop				

1) Can be configured when the SYSTEM SELECT switch at the rear of the camera is set to position 7.
Use one of the following methods to apply the settings.
- Turn off DC power, and turn it on again.
- Turn off power using the IR remote commander, and turn it on again.
- Send CAM_Power On and Off commands.

EVI-HD7V/HD3V Block Inquiry Command List

Lens control system inquiry commands ..... Command Packet 8x 09 7E 7E 00 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0 Completion Message (50h)
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	Zoom Position (HH)
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	Zoom Position (HL)
	2	
	1	
	0	
4	7	0
	6	0
	5	0
	4	0
	3	Zoom Position (LH)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	Zoom Position (LL)
	2	
	1	
	0	

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	0
	3	Focus Near Limit (H)
	2	
	1	
	0	
7	7	0
	6	0
	5	0
	4	0
	3	Focus Near Limit (L)
	2	
	1	
	0	
8	7	0
	6	0
	5	0
	4	0
	3	Focus Position (HH)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	Focus Position (HL)
	2	
	1	
	0	
10	7	0
	6	0
	5	0
	4	0
	3	Focus Position (LH)
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	0
	3	Focus Position (LL)
	2	
	1	
	0	

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
13	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	1
	0	Focus Mode 1: Auto 0: Manual
14	7	0
	6	0
	5	0
	4	0
	3	0
	2	0/1 (Optional)
	1	0/1 (Optional)
	0	0/1 (Optional)
15	7	1 Terminator (FFh)
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Camera control system inquiry commands ..Command Packet 8x 09 7E 7E 01 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0 Completion Message (50h)
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	WB R_Gain (H)
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	WB R_Gain (L)
	2	
	1	
	0	
4	7	0
	6	0
	5	0
	4	0
	3	WB B_Gain (H)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	WB B_Gain (L)
	2	
	1	
	0	

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	OnePush RESPONSE
	3	0: Inquiring 1: OK 2: NG
	2	WB Mode
	1	0: Auto 1: Indoor 2: Outdoor
	0	3: OnePush 5: Manual
7	7	0
	6	0
	5	0
	4	0
	3	Aperture Gain
	2	
	1	
	0	
8	7	0
	6	0
	5	0
	4	Exposure Mode
	3	0x0: Auto 0x3: Manual
	2	0xA: Shutter Pri
	1	0xB: Iris Pri 0xD: Bright
	0	0x10: SpotLight
9	7	0
	6	0
	5	0
	4	0
	3	0
	2	Back Light 1:On 0:Off
	1	Exposure Comp. 1:On 0:Off
	0	1
10	7	0
	6	0
	5	0
	4	Shutter Position
	3	
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	Manual Iris Position
	3	
	2	
	1	
	0	

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	Manual Gain Position
	2	
	1	
	0	
13	7	0
	6	0
	5	0
	4	Bright Position
	3	
	2	
	1	
	0	
14	7	0
	6	0
	5	0
	4	0
	3	Exposure Comp. Position
	2	
	1	
	0	
15	7	1 Terminator (FFh)
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Other inquiry commands ..... Command Packet 8x 09 7E 7E 02 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0 Completion Message (50h)
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	Power 1: On 0: Off
3	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
4	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
5	7	0
	6	0
	5	0
	4	0
	3	
	2	
	1	
	0	

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
7	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
8	7	0
	6	0
	5	0
	4	0
	3	Camera ID (HH)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	Camera ID (HL)
	2	
	1	
	0	
10	7	0
	6	0
	5	0
	4	0
	3	Camera ID (LH)
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	0
	3	Camera ID (LL)
	2	
	1	
	0	

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	1
	3	0
	2	0
	1	0
	0	System 1:50/25 0:59.94/29.97
13	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
14	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
15	7	1 Terminator (FFh)
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Enlargement Function Query Command ..... Command Packet 8x 09 7E 7E 03 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0 Completion Message (50h)
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
3	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
4	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
5	7	0
	6	0
	5	0
	4	0
	3	0
	2	1
	1	0
	0	1

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
7	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
8	7	0
	6	0
	5	0
	4	0
	3	1
	2	0
	1	0
	0	0
9	7	0
	6	0
	5	0
	4	0
	3	1
	2	0
	1	0
	0	0
10	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
11	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
13	7	0
	6	0
	5	0
	4	0
	3	
	2	
	1	
	0	
14	7	0
	6	0
	5	0
	4	0
	3	D-Zoom Limit
	2	
	1	
	0	
15	7	1 Terminator (FFh)
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

VISCA Command Setting Values

Exposure Control (1/2)

		59.94/29.97	50/25
Shutter Speed	15	10000	10000
	14	6000	6000
	13	4000	3500
	12	3000	2500
	11	2000	1750
	10	1500	1250
	0F	1000	1000
	0E	725	600
	0D	500	425
	0C	350	300
	0B	250	215
	0A	180	150
	09	125	120
	08	100	100
	07	90	75
	06	60	50
	05	60	50
	04	60	50
	03	60	50
	02	60	50
	01	60	50
Iris	11	F1.8	
	10	F2.0	
	0F	F2.4	
	0E	F2.8	
	0D	F3.4	
	0C	F4.0	
	0B	F4.8	
	0A	F5.6	
	09	F6.8	
	08	F8.0	
	07	F9.6	
	06	F11	
	05	F14	
	04	F16	
	03	F19	
	02	F22	
	01	F26	
	00	CLOSE	

Gain	07	18 dB
	06	15 dB
	05	12 dB
	04	9 dB
	03	6 dB
	02	3 dB
	01	0
	00	–3 dB

Exposure Control (2/2)

		IRIS	GAIN
Bright	17	F1.8	18 dB
	16	F1.8	15 dB
	15	F1.8	12 dB
	14	F1.8	9 dB
	13	F1.8	6 dB
	12	F1.8	3 dB
	11	F1.8	0
	10	F2.0	0
	0F	F2.4	0
	0E	F2.8	0
	0D	F3.4	0
	0C	F4.0	0
	0B	F4.8	0
	0A	F5.6	0
	09	F6.8	0
	08	F8.0	0
	07	F9.6	0
	06	F11	0
	05	F14	0
	04	F16	0
	03	F19	0
	02	F22	0
	01	F26	0
	00	CLOSE	0

		Step	GAIN
Exposure Comp.	0E	+7	+10.5 dB
	0D	+6	+9 dB
	0C	+5	+7.5 dB
	0B	+4	+6 dB
	0A	+3	+4.5 dB
	09	+2	+3 dB
	08	+1	+1.5 dB
	07	0	0 dB
	06	–1	–1.5 dB
	05	–2	–3 dB
	04	–3	–4.5 dB
	03	–4	–6 dB
	02	–5	–7.5 dB
	01	–6	–9 dB
	00	–7	–10.5 dB

Zoom Ratio and Zoom Position (for reference)

Zoom Ratio	Optical Zoom Position Data	D-Zoom Ratio
×1	0000	
×1.2	0800	
1.5	1000	
×1.9	1800	
×2.5	2000	
×3.4	2800	
×4.8	3000	
×6.8	3800	
×10.1	4000	
	4000	×1
	5bc0	×1.5
	69c0	×2
	7e80	×4

Focus and Focus Distance (for reference)

Focus Position	1000: Over Inf (Far end) to 7600: 0.10 m (Near end)	
Focus Near Limit	2000: 2.99 m 3000: 1.29 m 4000: 0.75 m 5000: 0.47 m 6000: 0.24 m 7000: 0.19 m 7600: 0.10 m	As the distance on the left will differ due to temperature characteristics, etc., use as approximate values. *The lower 1 byte is fixed at 00.

Others

R,B gain	00~FF
Aperture	00~0F

Pan/Tilt Status Code List

P	Q	R	S	
- - - -	- - - -	0 - - -	- - - 1	A Pan movement all the way to the left
- - - -	- - - -	0 - - -	- - 1 -	A Pan movement all the way to the right
- - - -	- - - -	0 - - -	- 1 - -	A Tilt movement all the way up
- - - -	- - - -	0 - - -	1 - - -	A Tilt movement all the way down
- - - -	- - - -	- - 0 0	- - - -	Pan movement is correct
- - - -	- - - -	- - 0 1	- - - -	Pan position cannot be detected
- - - -	- - - -	- - 1 0	- - - -	The Pan mechanism is abnormal
- - - -	- - 0 0	0 - - -	- - - -	The Tilt movement is correct
- - - -	- - 0 1	0 - - -	- - - -	The Tilt position cannot be detected
- - - -	- - 1 0	0 - - -	- - - -	The Tilt mechanism is abnormal
- - - -	0 0 - -	0 - - -	- - - -	No movement instructions
- - - -	0 1 - -	0 - - -	- - - -	In the midst of a Pan/Tilt
- - - -	1 0 - -	0 - - -	- - - -	Pan/Tilt completed
- - - -	1 1 - -	0 - - -	- - - -	Pan/Tilt failed
- - 0 0	- - - -	0 - - -	- - - -	Not initialized
- - 0 1	- - - -	0 - - -	- - - -	Initializing
- - 1 0	- - - -	0 - - -	- - - -	Initialization completed
- - 1 1	- - - -	0 - - -	- - - -	Initialization failed

(- : optional)

Pan/Tilt Position (for reference)

	Parameter (position)
PAN	FA60 (–100 degree) to 05A0 (+100 degree)
TILT	FE98 (–25 degree) to 0168 (+25 degree)

LED Status

Status			POWER (Green)	STANDBY (Orange)
Main power ON	Power On (including initializing period)		On	Off
		When receiving infrared signals form Remote Commander	Blinking	Off
		At position detection error	On	Blinking
	Sandby status Power off by VISCA or the Remote Commander		Off	On
Main power Off			Off	Off
Initialization error	Pan/tilt error		Blinking	Blinking
	Internal error(LSI, etc.)		Blinking alternately	
BOTTOM switch and SYSTEM SELECT switch	Setting error (Example: when the SYSTEM SELECT switch is set to positions "6 - 7" or "D - F" for the EVI-HD7V, or positions "0 - 2," "6 - 4," or "D - F" for the EVI-HD3V.)		On	On
Cooling fan malfunction (camera images still output)			Blinking alternately (slow)	

Specifications

System

Video signal
EVI-HD7V: 1920×1080p/59.94, 1920×1080p/50, 1920×1080p/29.97, 1920×1080p/25, 1920×1080i/59.94, 1920×1080i/50, 1280×720p/59.94, 1280×720p/50, 1280×720p/29.97, 1280×720p/25, 640×480p/59.94 (LB), VISCA CONTROL (switched with the SYSTEM SELECT switch)
EVI-HD3V: 1280×720p/59.94, 1280×720p/50, 1280×720p/29.97, 1280×720p/25, 640×480p/59.94 (LB), VISCA CONTROL (switched with the SYSTEM SELECT switch)

Synchronization: Internal synchronization

Image device: 1/3 type (6 mm), CMOS

Lens: 10× (optical), 40× (digital) f = 3.4 – 33.9 mm, F1.8 – F2.1
Horizontal angle: 8 (TELE end) to 70 degrees (WIDE end)

Minimum object distance
100 mm (4 inches) (WIDE end)

Minimum illumination
15 lux (F1.8) with 50 IRE

Shutter speed: 1/50, 1/60 to 1/10,000 sec.

Video S/N: 50 dB

Pan/tilt action: Horizontal: ± 100 degrees
Maximum panning speed: 300 degrees/sec.
Vertical: ± 25 degrees
Maximum tilting speed: 125 degrees/sec.

Input/output connectors

Video output
COMPONENT (VIDEO OUT): DVI-I connector
Y: 1 Vp-p (sync, at 75-ohm termination)
Pb/Pr: ±350 mVp-p, 75-ohm terminated
HD/VD Sync: 3.3 Vp-p
DVI Digital VIDEO (VIDEO OUT): DVI-I connector

Control input/output
VISCA IN: Mini DIN 8-pin type, RS-232C
VISCA OUT: Mini DIN 8-pin type, RS-232C

Power connector: JEITA type4 (DC IN 12 V)

General

Input voltage: 12 V DC (10.8 to 13.0 V DC)

Current consumption
2.2 A max. (at 12 V DC)

Operating temperature
0°C to 40°C (32°F to 104°F)

Storage temperature
–20°C to +60°C (-4°F to 140°F)

Dimensions: Video camera: 250 × 152 × 135 mm (9 7/8 × 6 × 5 3/8 inches) (w/h/d)
Remote Commander: 56 × 26 × 210 mm (2 1/4 × 1 1/16 × 8 3/8 inches) (w/h/d)

Mass: Video camera: Approx. 1.5 kg (3 lb 5 oz)
Remote Commander: 109 g (3.8 oz)

Installation angle
Less than ± 15 degrees to the horizontal surface

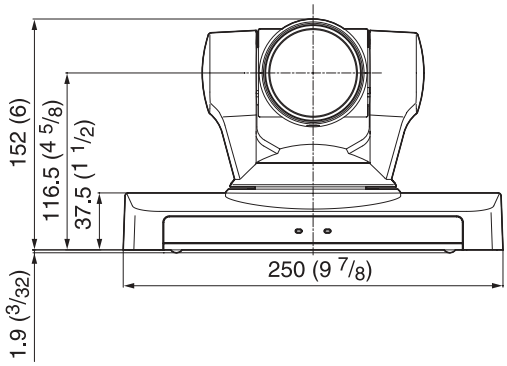
Supplied accessories

AC power adaptor (1)
AC power cord (1)
Remote Commander (1)
Operating Instructions (1)

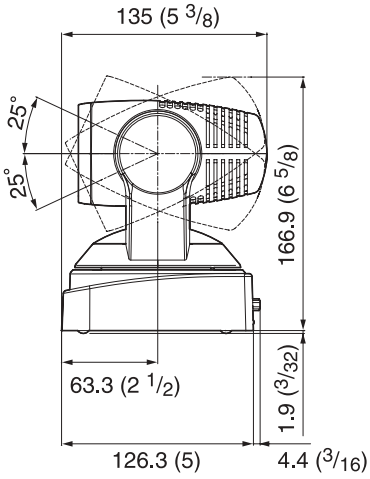
Design and specifications are subject to change without notice.

Dimensions

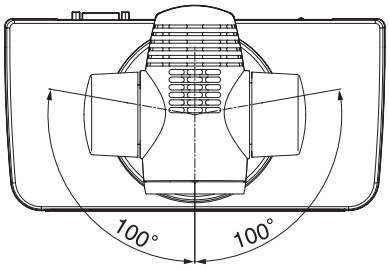
Front



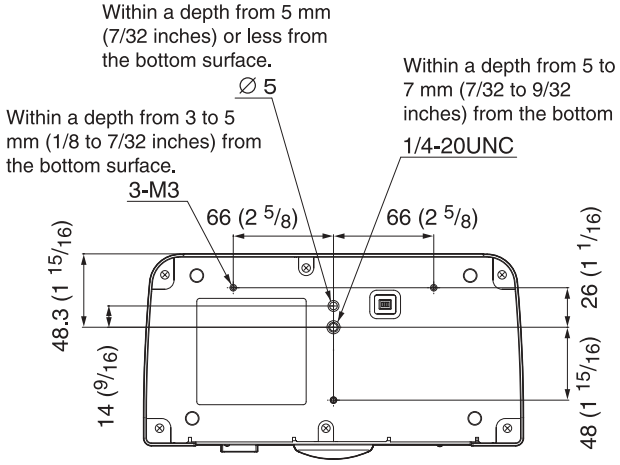
Side



Top



Bottom



Unit: mm (inches)

Precautions

Software

Use of the demonstration software developed by Sony Corporation or use of the software with customer developed application software may damage hardware, the application program or the camera. Sony Corporation is not liable for any damages under these conditions.

Operation

Start the camera control software on your computer after you turn on the camera and the image is displayed.

Operation and storage locations

Do not shoot images that are extremely bright (e.g., light sources, the sun, etc.) for long periods of time. Do not use or store the camera in the following extreme conditions:

- Extremely hot or cold places (operating temperature 0 ˚C to +40 ˚C (32 ˚F to 104 ˚F))
- Close to generators of powerful electromagnetic radiation such as radio or TV transmitters
- Where it is subject to fluorescent light reflections
- Where it is subject to unstable (flickering, etc.) lighting conditions
- Where it is subject to strong vibration

Care of the unit

Remove dust or dirt on the surface of the lens with a blower (commercially available).

Other

Do not apply excessive voltage. (Use only the specified voltage.) Otherwise, you may get an electric shock or a fire may occur.

In case of abnormal operation, contact your authorized Sony dealer or the store where you purchased the product.