

One single Camera Controller in Bennion Stake Center Chapel

FOR THE SONY CENTER CAMERA AND THE LUMENS CORNER CAMERA

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The Center and Corner cameras Overview

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If you are just wanting to learn how to use the Sony camera controller select/click on Section 2
If you want to understand how the Visca RS-232 is setup, then click on Section 1
The Appendixes are from the Manufactures manuals that provide more detailed information

RE-PURPOSE OF EXISTING UNUSED CAT 6 CABLES TO CREATE R232 DAISY CHAIN

Section 1 Implementation of Visca RS-232 Camera control

Terms used in this Document (you can google these terms to learn more if desired)

Balanced cabling is a wire pair with a positive and negative that has no reference to earth ground, some cables will have a shield goes around the wire pair and that shield is tied to an earth ground. In an LDS chapel Microphone cables and mic jack are balanced with a shield wrapped around the twisted pair. Typically balanced circuits are what we call transformer coupled that provides further isolation from noise and hum and other interferences. USB cables are another example of a balanced circuit.

Unbalanced cable a coaxial cable like used in Cable TV is an example of an unbalanced circuit where the center conductor is positive, and the negative side is the shield around the insulated center conductor (insulation is also called dielectric). The shield is typically tied to earth ground. In an LDS Church sound system, you will find unbalanced connections, those cables typically have RCA type plugs and meant to be for short lengths pf 10 feet or less. Unbalanced can also be cables with wire conductors with no twisted pairs with one wire conductor used for a negative path for all the other wire conductors that have the positive side if the signal. This is typical legacy computer serial cables that use RS-232.

CAT 5/6 cable is balanced tightly twisted 4 pair cables that has high speed data transmission speeds up to 328 feet in length before regeneration is needed by another data switch/router etc.

PTZ Camera: Pan, Tilt and Zoom

Visca: "Video System Control Architecture" Originally developed by Sony it as been adopted by other Camera MFG's.

RS-232 stands for Recommended Standard 232 by the EIA (Electronics Industry Association) and the ITU-T/CCITT (a European Standards board) and has been around since 1960. It is an **unbalanced wire transmission system** that limited cable length to around 50 feet for data transmission. With advent of Category 5 and 6 cabling it seems that limitation has been extending up to 300 feet. The way the pinouts are situated on these CAT5-6 adapters it almost converting RS-232 from unbalanced to balanced.
The first version of VISCA uses RS-232, additional versions of VISCA use a balanced version of RS-232 called RS-422 were transmit and receive wires are paired increasing its data transmission length up to 4000 feet. The latest version of VISCA is IP (Internet Protocol) though VISCA over IP deployed by Sony is more proprietary. We could not connect the Lumens Camera to the Sony RMIP-10 over IP.

568A and 568B are EIA/TIA wiring standards for laying out the order of wire pairs in 8 pin modular plugs and many times adapters using this standard are referred to incorrectly as RJ45 modular plugs.

RJ45 is a AT&T standard for laying the order of wire pairs in 8 pin modular plugs and is many times incorrectly used, For sake of simplicity RJ45 is used is incorrectly in this document

The Center and Corner cameras in the Bennion Stake Center can now be controlled from the Sony Camera Controller

- This is possible by using the legacy RS-232 method instead of using the Sony proprietary Visca IP protocol

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- The benefits of the change are:

VISCA RS-232 is open architecture which both the Sony and Lumens camera support

Both Cameras can be turned on and off from the Controller.

Both Cameras can Pan-Tilt-Zoom from the controller Joystick

UP to 16 Preset buttons can be setup on the Controller for each individual Camera

It is not quite as robust IP connection for the Sony camera, but the joystick is much faster than using the Camera remotes

VISCA uses a decades old protocol “RS-232” the RS-232 method used is simple Transmit/Receive (no complicated controls) Technical Support should be minimal

The use of CAT 6 cable and CAT6 to din plugs can extend the length from 30 limit on RS-232 to 300 feet

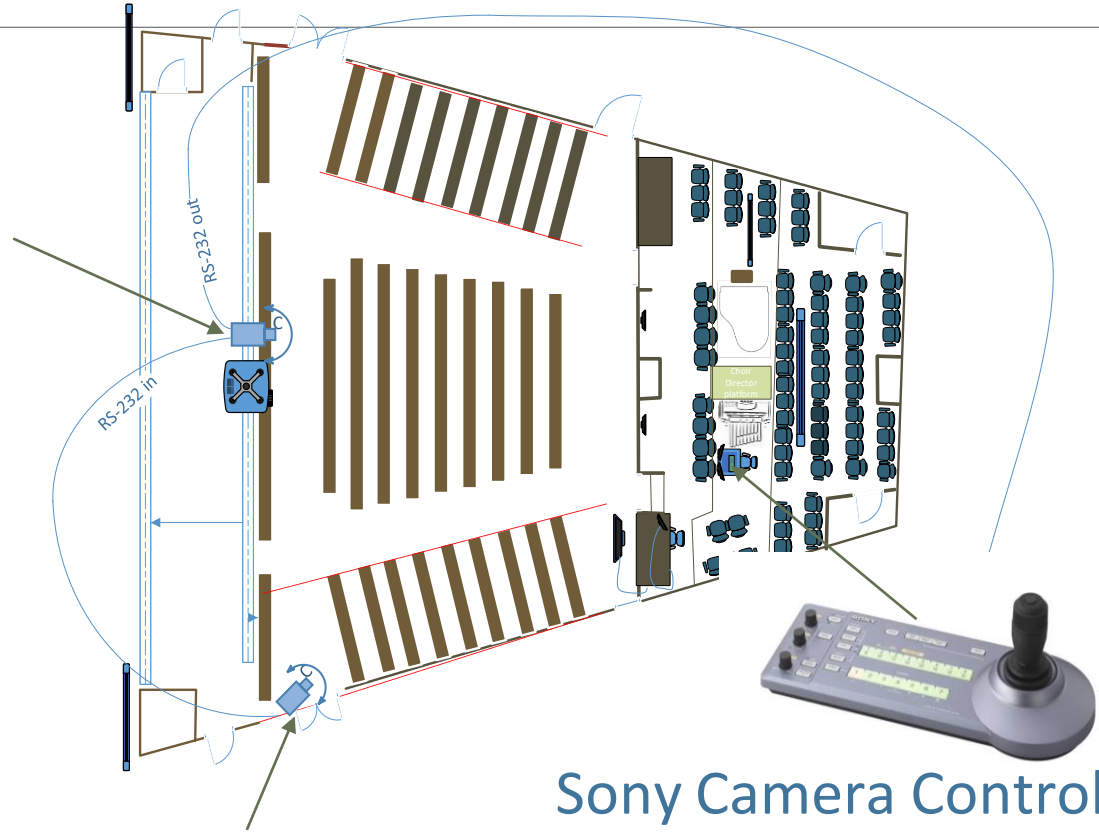
We were able to identify existing surplus CAT 6 cabling and re-arrange with Lumens connectors.

The simple reconfiguration of the Sony camera controller using Visca RS-232 protocol

Sony Center Camera

- CAT 6 cable daisy chained from corner camera to center camera to controller
- All connections to camera and controller are 8 pin 568b to DIN plug Lumens adapter
- Corner camera assigned ID 2 (Button 2 on controller)
- Center camera assigned ID 1 (Button 1 on controller)
- Cameras and controller baud rates set to 38400

(Highest bandwidth available)

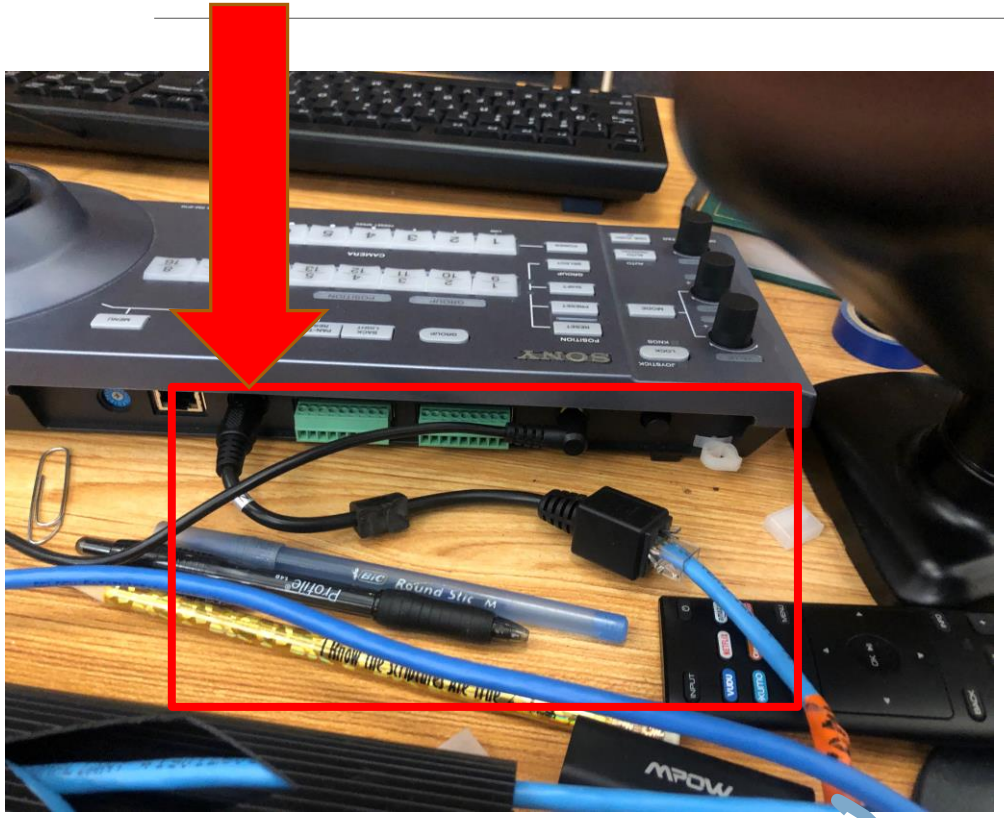


Sony Camera Controller at ASL PC desk

Lumens Corner Camera

Detail of connections Lumens adapter (DIN to 8 pin plug) to daisy chained CAT 6 cables

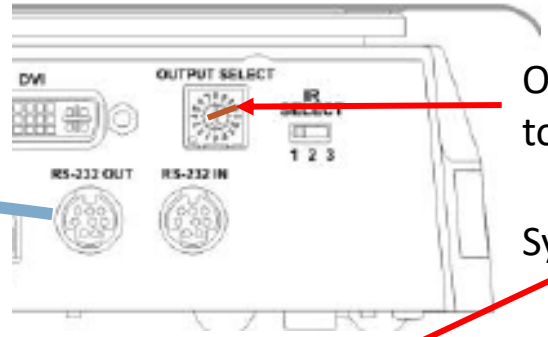
Lumens Corner adapter connected 8 pin DIN input on the SONY RMIP10 Controller at ASL PC control Desk



DIN plug to Cat6 8 pin plug
Adapters connected cameras



Lumens Corner Camera rear view snippet

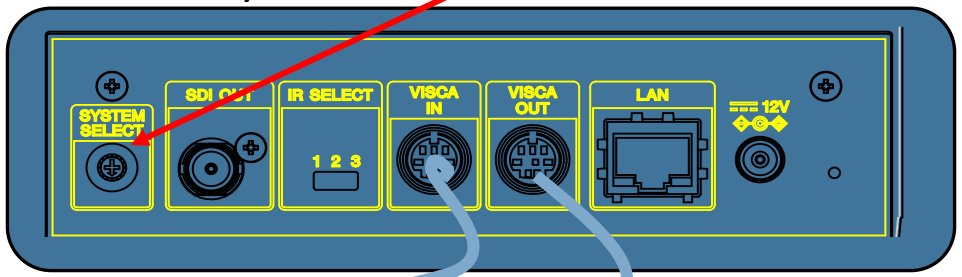


Output Selector set to 2

System Selector set to 1

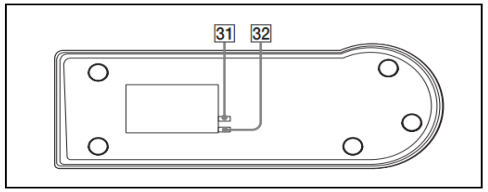
CAT6 Cable 1 from Corner Camera RS232 out to Center Camera VISCA IN

Sony Center Camera rear view



CAT6 Cable 2 from Center Camera VISCA Out to RMIP10 controller RS-232C DIN

Bottom



Notes

- The Mac address is printed on the bottom of the IP remote controller.
- Set the switches before you turn on the power of this unit. Otherwise, the setting is not effective (except for DIP 2 switches 1 and 2).

31 **DIP 1 switch**

Switch 1: Serial/LAN connection selector
Selects the communication method.
Set ON for serial connection, or OFF for LAN connection.

Switch 2: RS-232C/RS-422 selector
Selects the RS-232C or RS-422 when DIP 1 switch 1 is set to ON.
Set to ON for RS-422, or OFF for RS-232C.

Switch 3: Communication baud rate selector
Selects the communication baud rate for RS-232C/RS-422.
Set to ON for 38,400 bps, or OFF for 9,600 bps.

Switch 4, 5: TALLY/CONTACT switch
Selects the function of the TALLY/CONTACT connector.
You can select the following functions.

Switch 4	Switch 5	Mode
OFF	OFF	NORMAL TALLY mode: The following actions are performed for the number that is input from the TALLY/CONTACT connector only while receiving the commands. • The selected camera switches to the camera matching the number of the command from the TALLY/CONTACT connector. – When the selected camera number matches that of the command from the TALLY/CONTACT connector: The selected camera is not switched, and can continue to be operated.

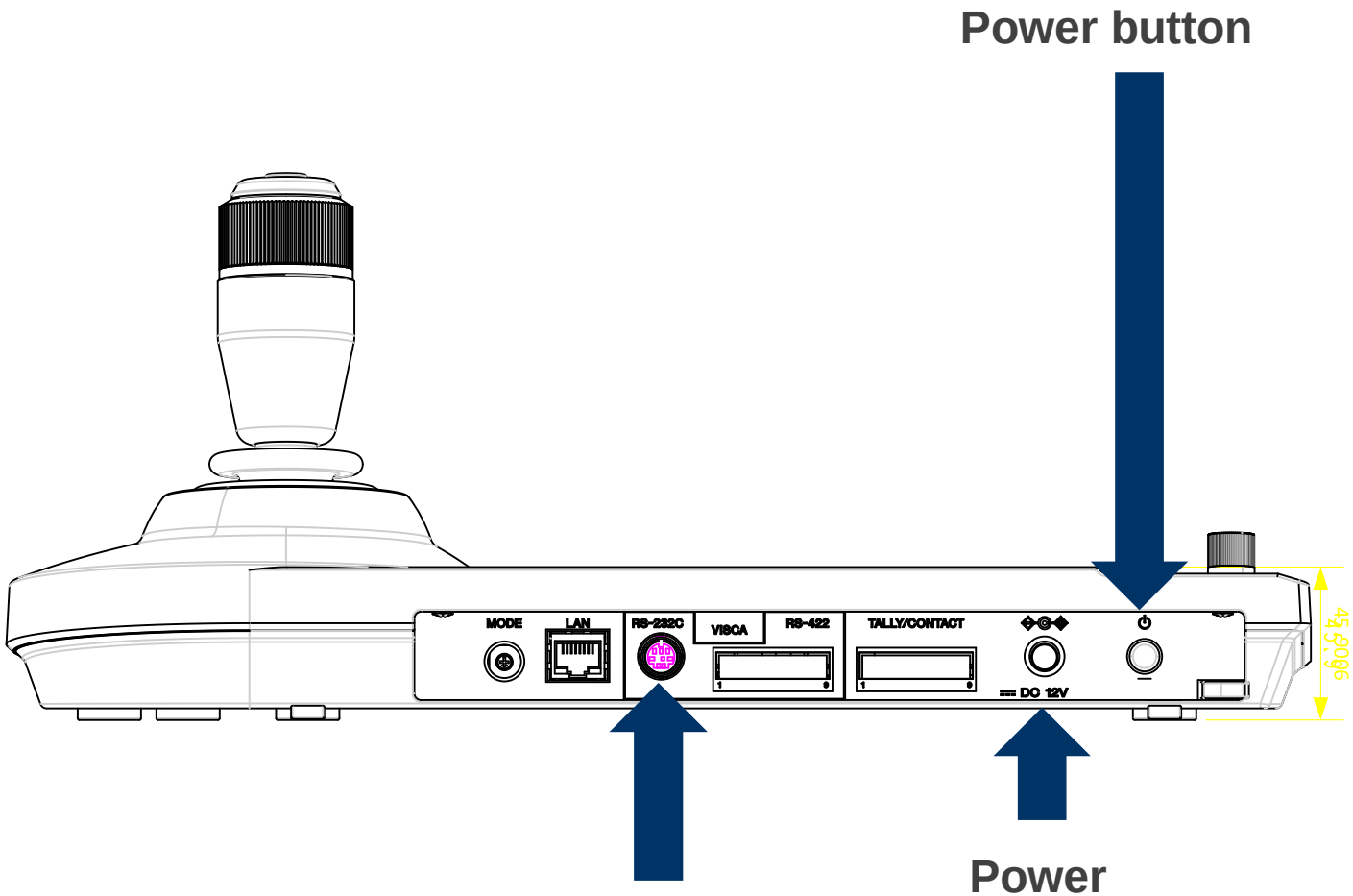
RMIP-10 setup
31- DIP 1 switch

Switch 1: on
Switch 2: off
Switch 3: on

USE OF THE JOYSTICK FOR PAN TILT ZOOM (PTZ) AND USING PRESETS

Section 2 Operation of the Sony Camera Controller

Sony RM-IP10 Rear view



Center Camera Control

After powering on controller (by pressing power button in rear) press 1 for Center Camera Control



Corner Camera Control

Press 2



Presets for Pan Tilt and Zoom (PTZ) Center Camera

Presets are actually stored on camera but can be programmed from the controller or the remote

PRESET button
Hold down this and press one of position buttons. The current camera settings are stored in the memory of the camera corresponding to the position button

Shift button moves to 9 to 16 preset row

The GROUP button works only for the LAN connection. (which are we are not using LAN as controller has been switched to VISCA mode)

Power button
Hold down this button and then press either 1 or 2 to turn on camera.

- When button is yellow the Camera is on.
- Green indicates Standby mode

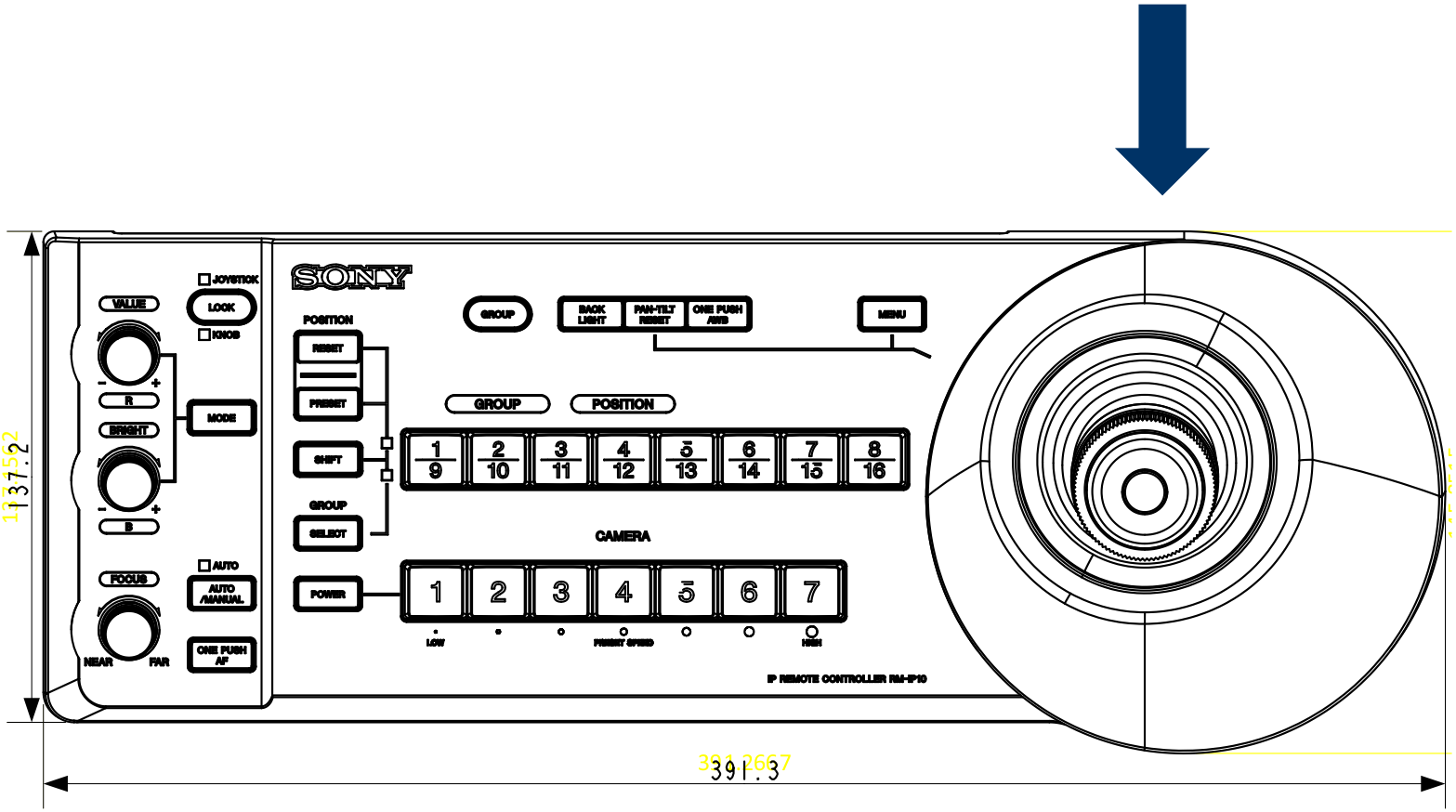


Preset rows

Presets for PTZ corner camera operation when you press 2

Overhead view controller with Joystick view

Joystick controls the Pan Tilt Zoom (PTZ)



Panning and tilting

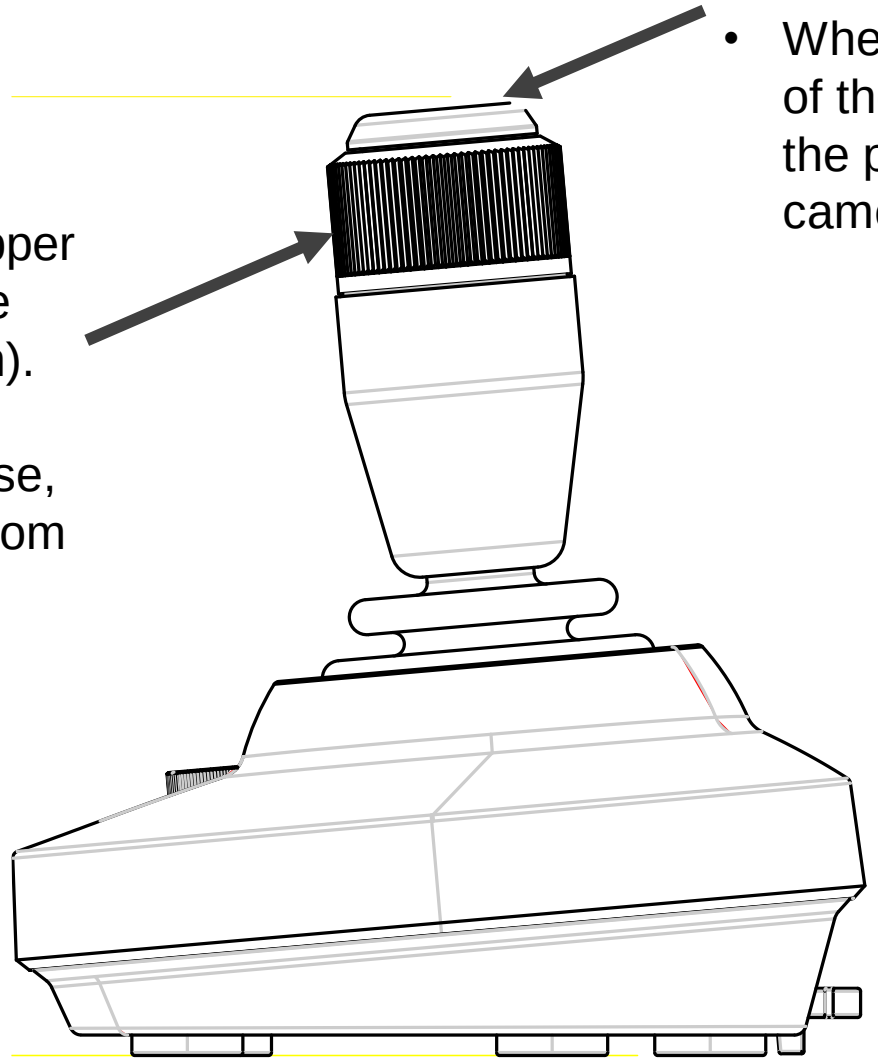
- When you incline the joystick right or left, the camera pans.
- When you incline it forward or backward, the camera tilts.
- The pan/tilt speed changes according to the angle of the inclination.
- When you release the joystick, the camera movement stops.

Side view of Joystick

Basic Joystick Zoom Operation

Zooming

- When you turn the dial on the upper part of the joystick clockwise, the subject becomes larger (zoom in).
- When you turn it counterclockwise, the subject becomes smaller (zoom out).



To face the camera back to the front

- When you press the button on the top of the joystick for one or two seconds, the pan/tilt/zoom are reset and the camera returns to face directly ahead.

Section 3 Appendix 1

Sony RM-IP10 Operations manual

APPENDIX 1

Note

You cannot use the multiple communication methods simultaneously.

The optical three-axis joystick allows comfortable pan/tilt/zoom operations.

Easy operation of versatile camera adjustments

Using the buttons on the unit, you can easily perform various adjustments such as auto focusing, one-push auto focus adjustment, AE adjustment, one-push auto white balance adjustment and backlight compensation.

Preset feature to save camera settings

You can save up to 16 combinations of camera settings such as pan/tilt/zoom positions and other camera adjustment values, in the memory of the camera.

Notes

- The operable functions are limited to those that the camera is equipped with.
- This manual mainly explains the functions of the unit for the BRC-H900 camera.
  When another camera is connected, refer to the Operating Instructions supplied with that camera for available functions.

System requirements for the PC

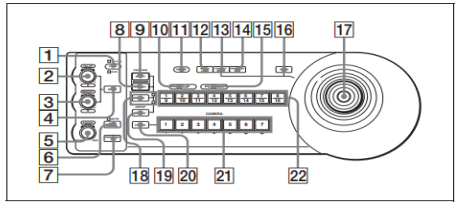
To use the supplied software, you need a PC with the following specifications.

- CPU: Intel Core2 Duo 2.4 GHz or higher (recommended)
- Memory: 1 GB or more (recommended)
- Hard disk: More than 50 MB available
- LAN port: 10BASE-T or 100BASE-TX
- OS: Microsoft Windows 7 (32bit, 64bit), Windows 8.1 Pro (32bit, 64bit), Windows 10 Pro (32bit, 64bit)

Location and Function of Parts

This manual is based on operation of the RM-IP10 when used with a BRC series Color Video Camera.

Front



1 LOCK button and JOYSTICK/KNOB indicators

Each time you press the LOCK button for more than one second, the JOYSTICK or/and KNOB indicator(s) turn on or off.*

When the JOYSTICK indicator is on, the 17 Joystick, 13 PAN-TILT RESET button, and 16 MENU button cannot be operated.

When the KNOB indicator is on, the 2 VALUE/R control, 3 BRIGHT/B control, 4 MODE button, 5 FOCUS control, 6 AUTO/MANUAL button, and 7 ONE PUSH AF button cannot be operated.

* For details of the lighting pattern of the JOYSTICK/KNOB indicators, check the setting of DIP 1 switches 7 and 8.

2 VALUE/R control

When the brightness adjustment mode is selected with the MODE button (with the VALUE indicator lit):

This control adjusts the value of the item (SHUTTER or IRIS) selected on the camera.

When the VALUE indicator is lit, the function of the control varies according to the exposure mode selected on the camera. For details, see "Functions of the VALUE and BRIGHT controls" on page 6.

When the white balance adjustment mode is selected with the MODE button (with the R indicator lit):

This control adjusts the R. GAIN (red gain).

The function of the control with the R indicator lit varies according to the white balance mode selected on the camera. For details, see "Functions of the R and B controls" on page 6.

3 BRIGHT/B control

When the brightness adjustment mode is selected with the MODE button (with the BRIGHT indicator lit):

This control adjusts the value of the brightness of the camera, etc.

When the BRIGHT indicator is lit, the function of the control varies according to the exposure mode selected on the camera. For details, see "Functions of the VALUE and BRIGHT controls" on page 6.

When the white balance adjustment mode is selected with the MODE button (with the B indicator lit):

This control adjusts the B. GAIN (blue gain).

The function of the control with the B indicator lit varies according to the white balance mode selected on the camera. For details, see "Functions of the R and B controls" on page 6.

Functions of the VALUE and BRIGHT controls

The functions of the VALUE control and the BRIGHT control change according to the exposure mode setting on the camera, as follows:

Exposure mode on the camera	Function of VALUE control	Function of BRIGHT control
FULL AUTO	Not assigned	Exposure compensation level control (When the exposure compensation function is activated on the camera.)
BACK LIGHT*3	Not assigned	
SPOT LIGHT*3	Not assigned	
SHUTTER Pri	Shutter speed control	
IRIS Pri	Iris control	AE level control*4
GAIN Pri*2	Gain control*2	
BRIGHT*5	Not assigned	Brightness level control*5
MANUAL	Shutter speed control	Iris control*1

*1 Iris and gain controls are operable when DIP 2 switch 3 is set to ON.
*2 Available for the BRC-Z700 and BRC-Z330 only
*3 Available for the BRC-H900 only
*4 Available for the BRC-X1000/H800/H780/X400/X401 and SRG-X400/201M2/X120/HD1M2/360SHE/280SHE/300SE/301SE/201SE/300H/301H/120DH/121DH/120DU/120DS/HD1 only
*5 Available for the SRG-360SHE/280SHE/300SE/301SE/201SE/300H/301H/120DH only

Functions of the R and B controls

When the white balance adjustment mode is selected with the MODE button of this unit, the functions of the R control and B control change according to the white balance mode setting in the menu of the camera.

White balance mode on the camera	Function of the R control	Function of the B control
MANUAL	Red gain control	Blue gain control
AUTO1*1 *3, AUTO2*1 *3	WB R.SHIFT control*1, OFFSET control*3	WB B.SHIFT control*1, OFFSET control*3
AUTO*2	OFFSET control*2	OFFSET control*2
ONE PUSH	WB R.SHIFT control*1, OFFSET control*2 *3	WB B.SHIFT control*1, OFFSET control*2 *3

*1 Available for the BRC-Z700/Z330 only
*2 Available for the BRC-H900 and SRG-360SHE/280SHE/300SE/301SE/201SE/300H/301H/120DH/121DH/120DU/120DS/HD1 only
*3 Available for the BRC-X1000/H800/H780/X400/X401 and SRG-X400/201M2/X120/HD1M2 only

4 MODE button

Press this button to select the function of the VALUE/R control and BRIGHT/B control.

When the brightness adjustment mode is selected, the VALUE and BRIGHT indicators are lit.

When the white balance adjustment mode is selected, the R and B indicators are lit.

5 FOCUS control

This control is enabled when MANUAL is selected with the AUTO/MANUAL button. Turn the control counterclockwise (toward NEAR) to focus on a near subject, and clockwise (toward FAR) to focus on a far subject.

6 AUTO/MANUAL button and AUTO indicator

Press this button to select focus mode AUTO or MANUAL.

When AUTO is selected, the AUTO indicator lights and the camera focuses automatically on the subject in the center of the screen. The FOCUS control and the ONE PUSH AF button are disabled.

When MANUAL is selected, the FOCUS control and the ONE PUSH AF button are enabled (with the FOCUS indicator lit).

For the BRC-Z700 or BRC-Z330, you can adjust the focus manually if AF ASSIST is set to ON in the FOCUS menu. For details, refer to the Operating Instructions of the BRC-Z700 or BRC-Z330.

7 ONE PUSH AF button
This button is enabled when MANUAL is selected with the AUTO/MANUAL button. Press the button to perform the one-push auto focus function.

8 PRESET button
Hold down this button and press one of the GROUP/POSITION buttons. The current camera settings are then stored in the memory of the camera corresponding to the pressed GROUP/POSITION button.

9 RESET button
Hold down this button and press one of the GROUP/POSITION buttons. The memory of the camera corresponding to the pressed GROUP/POSITION button is then cleared to the factory-preset condition.
When multiple cameras are connected with RS-232C/RS-422, the camera addresses are set by holding down this button and pressing the POWER button.

10 GROUP indicator

11 GROUP button
While holding down this button, the GROUP indicator lights and the GROUP/POSITION button of the group number that is being operated lights in yellow.*
The GROUP button works only for the LAN connection.

* When the upper indicator next to the SHIFT button is lit, the GROUP/POSITION buttons are for group numbers 1 to 8. When the lower indicator next to the SHIFT button is lit, the GROUP/POSITION buttons are for group numbers 9 to 16.

12 BACK LIGHT button
Press this button to enable the backlight compensation function of the camera. Press it again to disable the function.

Hold down the SHIFT button and press this button to enable the spotlight compensation function. This function adjusts the exposure to a darker level if a portion of the subject is brightly lit.

To disable spotlight compensation, hold down the SHIFT button and press this button again.

Notes

- The backlight compensation or spotlight compensation function may not work depending on the camera or exposure mode of the camera. For details, refer to the Operating Instructions supplied with that camera.
- The backlight compensation and spotlight compensation exposure mode of the BRC-H900 differ from the FULL AUTO exposure mode. Spotlight compensation and backlight compensation adjustment cannot be performed at the same time.

13 PAN-TILT RESET button
Press this button to reset the pan/tilt position of the camera to its initial condition.

14 ONE PUSH AWB button
When the ONE PUSH white balance mode is selected on the camera, press this button to perform the one-push white balance adjustment.

Note

While the one-push white balance adjustment is being performed, the joystick operations (including stop operation) do not work.

15 POSITION indicator

16 MENU button
Press this button for about one second to display the menu of the camera, return to the main menu, or turn off the menu.

17 Joystick
The joystick is used for pan/tilt and zoom operations. Select the camera you want to control using the CAMERA buttons and operate the joystick.

Panning and tilting
When you incline the joystick right or left, the camera pans. When you incline it forward or backward, the camera tilts.
The pan/tilt speed changes according to the angle of the inclination.
When you release the joystick, the camera movement stops.

Zooming
When you turn the dial on the upper part of the joystick clockwise, the subject becomes larger (zoom in). When you turn it counterclockwise, the subject becomes smaller (zoom out).

To face the camera back to the front
When you press the button on the top of the joystick for one or two seconds, the pan/tilt/zoom are reset and the camera returns to face directly ahead.

18 SHIFT button and indicators
When pressing the SHIFT button, the lower indicator lights and the GROUP/POSITION buttons can be used for group/position numbers 9 to 16. If you release the SHIFT button, the upper indicator will light and the GROUP/POSITION buttons can be used for group/position numbers 1 to 8.

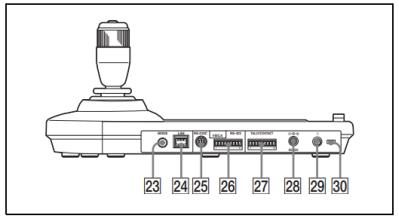
19 SELECT button
The camera group number can be changed by pressing the GROUP/POSITION button while this button is pressed. To select camera group numbers 9 to 16, press and hold the SHIFT button (the lower indicator lights).
The SELECT button works only for the LAN connection.

20 POWER button
Press this button to light the CAMERA button(s) corresponding to the status of the connected camera(s).
Yellow: The power of the camera is on.
Green: The camera is in standby mode.
Off: No camera is connected.
Hold down this button and press CAMERA buttons 1 to 7 to turn on/off the power of the camera corresponding to the pressed button.

21 CAMERA buttons
Press one of the buttons to select the camera from among those connected. The selected CAMERA button lights in yellow.

22 GROUP/POSITION buttons
You can store various camera settings such as the pan, tilt and zoom positions to the memory of the camera corresponding to each GROUP/POSITION button, and load the settings in the memory.
This buttons are also used for selecting the camera group number when connecting over a LAN.

Rear



23 MODE selector
Select the position corresponding to the camera to be connected.

Switch position	Camera mode
0	Automatically selected (default)
1	Not used
2	Not used
3	Not used
4	Not used
5	Not used
6	Not used
7	BRC-Z700
8	BRC-Z330
9	BRC-H900
A	BRC-X1000/H800/H780
B	BRC-X400/X401, SRG-X400/201M2/X120/HD1M2
C	Not used
D	Not used
E	Not used
F	Not used

Note

Use positions 7 to 9, A, and B when all the connected cameras are of the same model. In other cases, use position 0.

24 LAN connector (RJ-45 8-pin)
For LAN connection.
Connect a LAN HUB (10BASE-T/100BASE-TX), using a LAN cable (category 5 or higher).
When a link is established, the green indicator lights, and it flashes during communication. While connected with 100BASE-TX, the yellow indicator also lights.

Notes

- For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to this port. Follow the instructions for this port.
- When you connect the LAN cable of the unit to peripheral device, use a shielded-type cable to prevent malfunction due to radiation noise.

25 **VISCA RS-232C connector**
Connect to the VISCA RS-232C IN connector of the camera or the Optical Multiplex Unit.

26 **VISCA RS-422 connector**
Connect to the VISCA RS-422 connector of the camera or the Optical Multiplex Unit.
An RS-422 connector plug is attached at the factory.

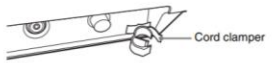
27 **TALLY/CONTACT connector**
This connector is used for the tally lamp input or the contact output.
Select the function of this connector using the DIP switch on the bottom of the unit.
You can use the factory fitted RS-422 connector plug for this connector.

28 **DC IN 12V connector**
Connect the supplied AC power adaptor.

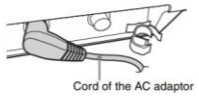
29 ⏻ **(power) switch**
Press this switch to turn on/off this unit.

30 **Cord clamper**
Fixes the cord of the AC power adaptor.

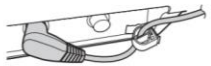
1. Release the lock of the cord clamper.



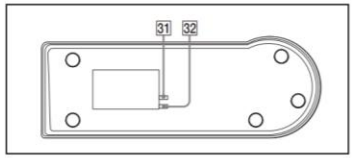
2. Connect the supplied AC power adaptor.



3. Thread the cord of the AC power adaptor into the cord clamper, then close the lock.



Bottom



Notes

- The Mac address is printed on the bottom of the IP remote controller.
- Set the switches before you turn on the power of this unit. Otherwise, the setting is not effective (except for DIP 2 switches 1 and 2).

31 **DIP 1 switch**

Switch 1: Serial/LAN connection selector
Selects the communication method.
Set ON for serial connection, or OFF for LAN connection.

Switch 2: RS-232C/RS-422 selector
Selects the RS-232C or RS-422 when DIP 1 switch 1 is set to ON.
Set to ON for RS-422, or OFF for RS-232C.

Switch 3: Communication baud rate selector
Selects the communication baud rate for RS-232C/RS-422.
Set to ON for 38,400 bps, or OFF for 9,600 bps.

Switch 4, 5: TALLY/CONTACT switch
Selects the function of the TALLY/CONTACT connector.
You can select the following functions.

Switch 4	Switch 5	Mode
OFF	OFF	NORMAL TALLY mode: The following actions are performed for the number that is input from the TALLY/CONTACT connector only while receiving the commands. • The selected camera switches to the camera matching the number of the command from the TALLY/CONTACT connector. – When the selected camera number matches that of the command from the TALLY/CONTACT connector: The selected camera is not switched, and can continue to be operated.

Section 4 Appendix 2 SONY SRG-120DS PTZ Camera

APPENDIX 2

About On-Screen Menus

You can change various settings, such as shooting conditions and system setup of the camera, while observing menus displayed on a connected computer screen.
This section explains how to read the on-screen menus before starting menu operations.

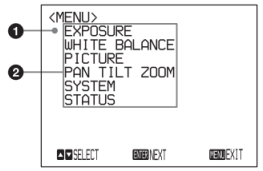
For the overall menu configurations, see "Menu Configuration" (page 20).

Note

You cannot perform pan/tilt operations while the menu is displayed.

Main Menu

To display the main menu, press the DATA SCREEN button on the supplied infrared remote commander.



❶ Selected item

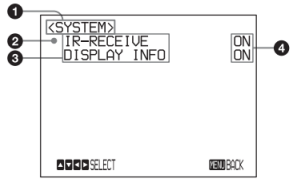
Selects a setting menu.
The selected item is shown by the cursor. The cursor moves up or down by pressing the ↑ or ↓ button on the infrared remote commander.

❷ Menu items

To display a setting menu, select one using the ↑ or ↓ button on the infrared remote commander and press the HOME button on the infrared remote commander.

Setting Menus

The setting menu selected on the main menu is displayed.



❶ Setting menu

The name of the setting menu currently selected is displayed here.

❷ Selected item

Selects a setting item.
The selected item is shown by the cursor.
Move the cursor up or down by pressing the ↑ or ↓ button on the infrared remote commander.

❸ Setting items

The setting items for this setting menu are displayed.
Select the setting item using the ↑ or ↓ button on the infrared remote commander.

❹ Set value

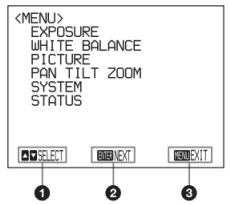
The currently set values are displayed.
To change a set value, use the ← or → button on the infrared remote commander.

For the default value of each setting item, see "Menu Configuration" (page 20).

Control Button Display Section

Names of buttons displayed on the monitor are different from buttons on the infrared remote commander to be used.
Use the proper buttons on the infrared remote commander, referring to the following pictures.

Main menu

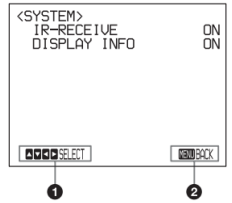


❶ Indicates that you can select a menu item by ↑ or ↓ button on the infrared remote commander. The selected item is shown by the cursor.

❷ Indicates that you can move to the next layer by pressing the HOME button.

❸ Indicates that you can return to the normal display by pressing the DATA SCREEN button.

Setting menu



❶ Indicates that you can select the setting item by using the ↑ or ↓ button and you can change the set value by using tthe ← or → button.

❷ Indicates that you can return to the main menu by pressing the DATA SCREEN button.

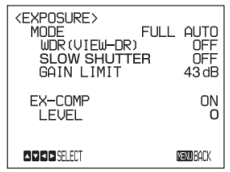
Note

When you are operating the menu using the supplied infrared remote commander, you cannot set IR-RECEIVE in the SYSTEM menu to OFF. To set IR-RECEIVE to OFF, use the appropriate VISCA command.

For detailed information on how to connect and VISCA command list, refer to the Technical Manual of the camera. For details on obtaining a Technical Manual, consult your Sony dealer.

EXPOSURE Menu

The EXPOSURE menu is used to set the items related to the exposure.



MODE (exposure mode)

FULL AUTO: The exposure is adjusted automatically using the sensitivity, electronic shutter speed, and iris.
BRIGHT: Adjust the brightness level (LEVEL) manually.
SHUTTER PRI: Shutter Priority mode. The exposure is adjusted automatically using the sensitivity and iris. Adjust the electronic shutter speed (SPEED) manually.
IRIS PRI: Iris Priority mode. The exposure is adjusted automatically using the sensitivity and electronic shutter speed. Adjust the iris (IRIS) manually.
MANUAL: Adjust the sensitivity (GAIN), electronic shutter speed (SPEED) and iris (IRIS) manually.

When you select one from among the various exposure modes, some of the following setting items that are required for the selected mode appear.

GAIN: Select the gain from among the following:
0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 43 dB
SPEED: Select the electronic shutter speed from among the following:

For the 59.94/29.97 video format:
1/1, 1/2, 1/4, 1/8, 1/15, 1/30,
1/60, 1/90, 1/100, 1/125, 1/180, 1/250,
1/350, 1/500, 1/725, 1/1000, 1/1500,
1/2000, 1/3000, 1/4000, 1/6000,
1/10000 sec.

For the 50/25 video format:
1/1, 1/2, 1/3, 1/6, 1/12, 1/25,
1/50, 1/75, 1/100, 1/120, 1/150, 1/215,
1/300, 1/425, 1/600, 1/1000, 1/1250,
1/1750, 1/2500, 1/3500, 1/6000,
1/10000 sec.

IRIS: Select the iris from among the following:
CLOSE, F14, F11, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.8
LEVEL: Select the brightness level from among 0, 5 to 31.

WDR (VIEW-DR) (Wide dynamic range mode):
When MODE (exposure mode) is set to FULL AUTO, the camera distinguishes light and dark areas in the same scene, adjusts the brightness for dark areas, and also controls the blown out highlights. You can select the wide dynamic range mode from among OFF, LOW, MID and HIGH.

Notes

- You can set the wide dynamic range mode when WDR (VIEW-DR) is set to FULL AUTO only.
- When WDR (VIEW-DR) is not set to OFF, the MODE setting is fixed at FULL AUTO.
- When changing WDR (VIEW-DR), a change in screen luminance occurs for a moment.
- When the change of exposure is big, the screen may stop for a moment.

GAIN LIMIT: Select the upper limit of the gain rise in FULL AUTO, SHUTTER PRI and IRIS PRI modes. Select from among 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 43 dB.

EX-COMP (exposure compensation)

When MODE is set to one of FULL AUTO, SHUTTER PRI or IRIS PRI, set this item to ON to enable exposure compensation. When you set EX-COMP to ON, LEVEL appears and you can select the exposure compensation level from among the following:
–7, –6, –5, –4, –3, –2, –1, 0, +1, +2, +3, +4, +5, +6, +7
If you set the level to 0, exposure compensation will be disabled. Level +7 is the brightest and –7 is the darkest compensation value.
When EX-COMP is set to OFF, exposure compensation does not function.

SLOW SHUTTER

When you set the mode to ON, the camera automatically uses slow shutter speed for exposure as the illumination of the object to be shot decreases. This mode is only available when AE mode is set to FULL AUTO.

WHITE BALANCE Menu

The WHITE BALANCE menu is used to select the white balance mode.



MODE (white balance mode)

Select the white balance mode from among the following:
AUTO, IN DOOR, OUT DOOR, ONE PUSH, ATW (Auto Tracing White Balance), MANUAL
When you select MANUAL, R.GAIN (red gain) and B. GAIN (blue gain) appear. You can select each item in the range from –128 to 127.

When you select the ONE PUSH mode

Perform the following operations.

1 Zoom in on a white subject in the center of the screen.

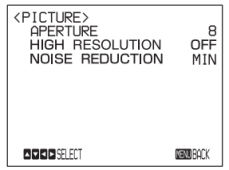
2 Press the HOME button of the supplied infrared remote commander.

The one-push white balance adjustment is activated.

When DISPLAY INFO (page 12) is set to ON in the SYSTEM menu, the white balance adjustment result is displayed on the monitor.

PICTURE Menu

The PICTURE menu is used to set the items related to the picture.



APERTURE (aperture compensation)

Select the aperture compensation level from among MIN, 1 to 14 and MAX.

HIGH RESOLUTION

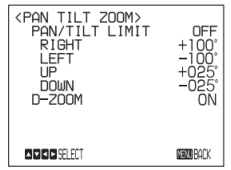
You can set this mode to ON or OFF. When set to ON, you can enjoy emphasised edge and high-resolution images.

NOISE REDUCTION

You can enjoy clearer images by removing unnecessary noise (fixed pattern and randomised noise). You can select 6 levels from OFF (MIN), 1 to 5 (MAX).

PAN TILT ZOOM Menu

The PAN TILT ZOOM menu is used to select the pan/tilt/zoom mode.



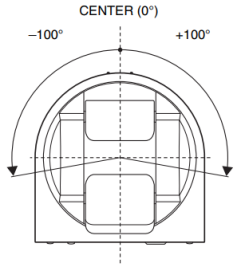
PAN/TILT LIMIT

When you set PAN/TILT LIMIT to ON, you can select the limit of pan/tilt operation.
You can select the following values:
RIGHT: +100° to –99°, selectable in 1° steps.
LEFT: +99° to –100°, selectable in 1° steps.
UP: +25° to –24°, selectable in 1° steps.
DOWN: +24° to –25°, selectable in 1° steps.

Note

The indicated value is changed when the ← or → button is released. When the pan/tilt function is in motion, the indicated value does not change.

Setting the range of LEFT/RIGHT movement

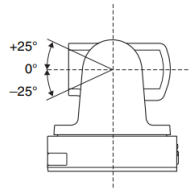


Note

The limit of pan/tilt operation becomes effective promptly after you set the range of PAN/TILT LIMIT. When you want to make the camera start with the ranges set, before turning off the power, store those values in POSITION 1.

For details, see "Storing the Camera Settings in Memory — the Presetting Feature" (page 16).

Setting the range of UP/DOWN movement



Note

When you turn the camera to the right or left beyond the 90° with the camera pointed downward by 25°, the camera may be caught on the lens, depending on the zoom position of the lens.

D-ZOOM (digital zoom)

You can set digital zoom to ON or OFF. When set to OFF, digital zoom does not operate, and only optical zoom is available. When set to ON, digital zoom takes over after optical zoom reaches MAX (12×). Up to 144× can be zoomed digitally.
When digital zoom is available, the resolution decreases.

SYSTEM Menu



IR-RECEIVE (infrared signal reception)

When this is set to OFF, the camera does not receive the signal from the supplied infrared remote commander. Be sure to keep it set to ON when you use the supplied infrared remote commander.

Note

You cannot set IR-RECEIVE to OFF when you operate the menu using the supplied infrared remote commander. To set it to OFF, use the appropriate VISCA command.

DISPLAY INFO

When this item is set to ON, the message automatically appears for about 3 seconds on the monitor screen, when you perform the following operations using the supplied infrared remote commander.

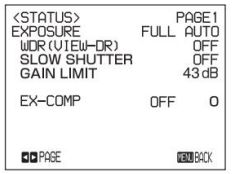
Message	Remote control operation
PRESET n: OK “n” is a preset position number of the infrared remote commander, between 1 and 6.	You have stored the camera settings to POSITION 1 to 6.
RECALL n: OK “n” is a preset position number of the infrared remote commander, between 1 and 6.	You have read the camera settings stored in POSITION 1 to 6.
RESET n: OK “n” is a preset position number of the infrared remote commander, between 1 and 6.	You have reset the camera settings stored in POSITION 1 to 6 to the default settings.
ONE PUSH WB: OP	During the white balance adjustment in the ONE PUSH white balance mode, the message blinks on the screen.
ONE PUSH WB: OK	When white balance adjustment is correctly performed in ONE PUSH white balance mode, this message appears on the screen.
ONE PUSH WB: NG	If white balance adjustment is incorrectly performed in ONE PUSH white balance mode, this message flashes on the screen.

Notes

- The operations in the VISCA CONTROL and LAN connection are from n: 1 to 16.
- To keep the settings even after restarting the camera, store the camera settings to PRESET1.

STATUS Menu

The STATUS menu is used to display the settings selected with the menus.



The STATUS menu consists of PAGE1 to PAGE5. This menu only displays the current menu settings, and you cannot change them with this menu.

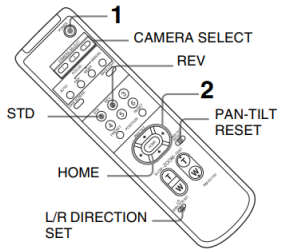
PAGE1: Shows the settings selected with the EXPOSURE menu.
PAGE2: Shows the settings selected with the PICTURE menu and the WHITE BALANCE menu.
PAGE3: Shows the settings selected with the PAN TILT ZOOM menu.
PAGE4: Shows the settings selected with the SYSTEM menu, supplied infrared remote commander channel, VISCA communication baud rate, and Video latency setting.
PAGE5: Shows the settings selected with the LAN connection with IP address, Subnet mask and MAC address (shows the settings when the BOTTOM switch is set to LAN only).

Note

The VISCA communication baud rate for the camera is displayed. Even if you change the settings by using the SYSTEM SELECT switch and the BOTTOM switch after turning on the power, those settings are ignored and are not changed on the display.

Pan/Tilt and Zoom Operation

Panning and Tilting



1 Press the POWER switch.

The camera will turn on and perform the pan/tilt reset operation automatically.

2 Press the arrow button to pan or tilt the camera.

While checking the picture on the screen, press the desired arrow button.

To move the camera little by little, press the button just for a moment.

To move the camera in a wide range, press and hold the button.

To move the camera diagonally, press the ← or → button while holding down the ↑ or ↓ button.

To face the camera back to the front

Press the HOME button.

If the camera moves in a different direction from the one you intended

The camera is preset so that the image output from the camera is rotated toward the right whenever you press the → button.

To face the camera toward the opposite direction

You might wish to face the camera toward the opposite direction from that of the button you pressed, for example, when you change the direction of the camera while checking the picture on the screen. In such a case, press the 2 (REV) button while holding down the L/R DIRECTION SET button.

Arrow button	Movement of the camera	Setting
		L/R DIRECTION SET While holding down REV (2) Press

To reset the setting

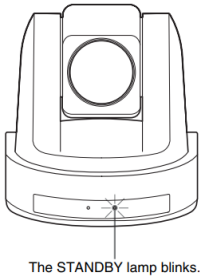
To reset the setting, press the 1 (STD) button while holding down the L/R DIRECTION SET button.

Arrow button	Movement of the camera	Setting
		L/R DIRECTION SET While holding down STD (1) Press

Note

The setting above only changes the signal emitted from the infrared remote commander, and does not change the setting of the camera itself. Therefore, repeat the setting for each infrared remote commander if you are using more than one infrared remote commander.

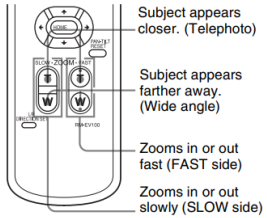
When the STANDBY lamp is blinking



If the camera is moved forcibly, or a finger or other object interferes with camera movement, the camera may fail to memorize the pan/tilt position.
Press the PAN-TILT RESET button to reset the pan/tilt position.

Zooming

Press either of the ZOOM buttons.



Note

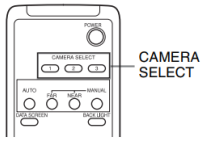
When you perform pan/tilt operation while the camera is in the telephoto mode, the moving speed of the image on the screen may be a little jerky.

Operating Multiple Cameras with the Infrared Remote Commander

1 Set the IR SELECT switch on the rear of the camera you want to operate to 1, 2 or 3.

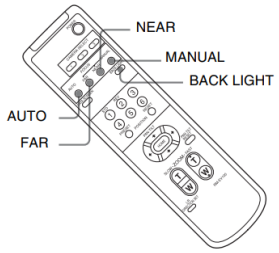


2 Press the CAMERA SELECT button on the infrared remote commander that corresponds to the number set in step 1.



Then, you can operate the camera(s) specified by number. Every time you operate the camera(s) using the infrared remote commander, the CAMERA SELECT button pressed in step 2 lights.

Adjusting the Camera



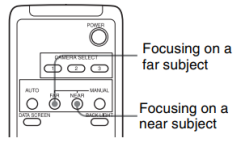
Focusing on a Subject

Focusing the camera on a subject automatically

Press the AUTO button.
The camera focuses on the subject at the center of the screen automatically.

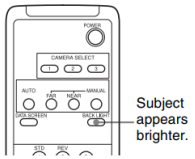
Focusing the camera on a subject manually

After pressing the MANUAL button, press either the FAR or the NEAR button to have the camera focus on the subject.



Shooting with Back Lighting

When you shoot a subject with a light source behind it, the subject becomes dark. In such a case, press the BACK LIGHT button.
To cancel the function, press the BACK LIGHT button again.



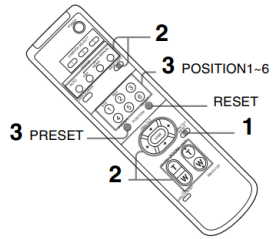
Note

The BACK LIGHT function is effective if MODE is set to FULL AUTO in the EXPOSURE menu of the camera.

Storing the Camera Settings in Memory — the Presetting Feature

Up to 16 combinations of settings (16 positions) including camera position, zooming, focusing, and backlighting, can be preset.

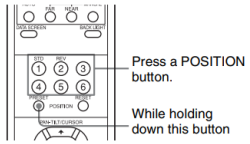
For details of the camera settings to be preset, see "Preset Items" (page 22).



1 Press the PAN-TILT RESET button to reset the pan/tilt position.

2 Adjust the position, zooming, focusing and backlighting of the camera (pages 14 and 15).

3 While holding down the PRESET button, press any of the POSITION buttons, 1 to 6, in which you want to store the settings.



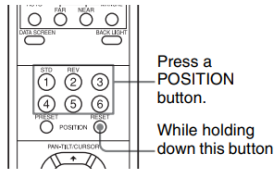
When you set DISPLAY INFO (page 12) to ON on the SYSTEM menu, the message "PRESET n : OK" automatically appears for about 3 seconds on the monitor screen.

Recalling the stored settings

Press any of the POSITION buttons, 1 to 6, in which you have stored the settings. The message "RECALL n:OK" automatically appears for about 3 seconds on the monitor screen.

Cancelling the preset memory

While holding down the RESET button, press the POSITION button from which you want to cancel the settings.



When you set DISPLAY INFO (page 12) to ON on the SYSTEM menu, the message "RESET n : OK" automatically appears for about 3 seconds on the monitor screen.

Notes

- When the power is turned on, the camera starts with the settings stored in POSITION 1.
- If you want to retain the previous pan and tilt positions, etc. before the power is turned off and turned on again, store those positions in POSITION 1.
- When you are storing or cancelling the settings in one POSITION, you cannot call up, store or cancel the settings in another POSITION.
- When the menu is displayed on the screen, you cannot perform the operation for storing, recalling, or cancelling the setting. Be sure to return to the normal display before starting these operations.

Message List

The following messages and indications may appear for this camera. Perform the following as necessary.

Lamp display

Lamp	Meaning and solution
When the power is turned on, the STANDBY lamp and POWER lamp are lit, flash together, or flash alternately.	The SYSTEM SELECT switch or the BOTTOM switch is not set correctly. Check the setting of each switch.
The STANDBY lamp is lit.	If the camera is moved forcibly, or a finger or other object interferes with camera movement, the camera's built-in processor may fail to memorize the pan/tilt position. Press the PAN-TILT RESET button of the infrared remote commander to reset the pan/tilt position.

Screen display

Message	Meaning and solution
PRESET n:OK ("n" is a preset position number between 1 and 16)	This message appears for about 3 seconds when you store camera settings to POSITION 1 to 16. The preset position number of the infrared remote commander is POSITION 1 to 6.
RECALL n:OK ("n" is a preset position number between 1 and 16)	This message appears for about 3 seconds when you read the camera settings stored in POSITION 1 to 16. The preset position number of the infrared remote commander is POSITION 1 to 6.
RESET n:OK ("n" is a reset position number between 1 and 16)	This message appears for about 3 seconds when you reset camera settings stored in POSITION 1 to 16. The preset position number of the infrared remote commander is POSITION 1 to 6.
ONE PUSH WB:OP	During the white balance adjustment in the ONE PUSH white balance mode, this message blinks on the screen.
ONE PUSH WB:OK	When the white balance adjustment has been done correctly in the ONE PUSH white balance mode, this message is lit on the screen.
ONE PUSH WB:NG	When the white balance adjustment has failed in the ONE PUSH white balance mode, this message blinks on the screen.

Preset Items

The following items set by using the infrared remote commander and menu items can be stored in the memory of the camera.

Items adjusted with the infrared remote commander

Preset item	Preset position number	
	1	2 to 6
Pan/Tilt Position	●	○
Zoom Position	●	○
Focus Mode Auto/Manual	●	○
Focus Position	●	○
Backlight Compensation ON/OFF	●	○

Menu items

Preset item	Preset position number	
	1	2 to 6
EXPOSURE MODE	●	○
WDR(VIEW-DR)	●	○
SLOW SHUTTER	●	–
AE GAIN LIMIT	●	–
BRIGHT LEVEL	●	○
SPEED	●	○
IRIS	●	○
GAIN	●	○
EX-COMP ON/OFF	●	○
EX-COMP LEVEL	●	○
WHITE BALANCE MODE	●	○
ONE PUSH WB R/B Data	●	–
MANUAL R/B GAIN	●	○
APERTURE	●	○
HIGH RESOLUTION	●	○
NOISE REDUCTION	●	○
PAN/TILT LIMIT	●	–
D-ZOOM	●	○
DISPLAY INFO	●	–

● : Setting items retained in memory when the power is turned off and then on again. The camera starts with these settings stored in POSITION 1.

○ : Setting items retained in memory when the power is turned off and then on again.

– : Setting items cleared from the memory when the power is turned off and then on and reset to the initial settings.

For detailed information on POSITION 1, see "Storing the Camera Settings in Memory — the Presetting Feature" (page 16).

You can store the following items in the memory (POSITION 1), but you can set them only by using the appropriate VISCA command.

- Focus Near Limit
- IR Receive
- IR Receive Return

For detailed information on the VISCA command list, refer to the Technical Manual of the camera. For details on obtaining a Technical Manual, consult your Sony dealer.

The setting of preset numbers 1 to 16 are available for VISCA CONTROL and LAN connection.

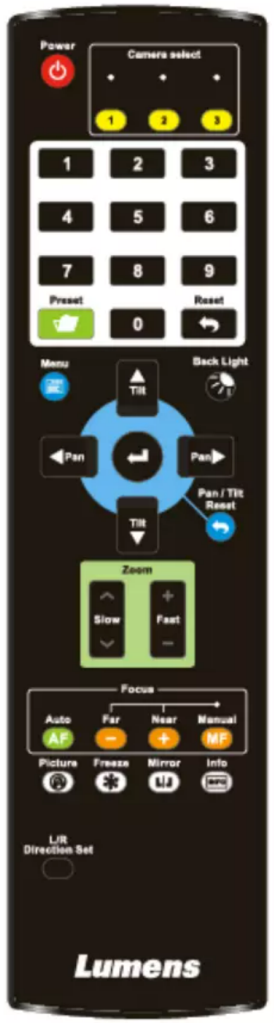
Section 5 Appendix 3 Lumens PTZ Camera VC-A51SW

APPENDIX 3

Chapter 5 Remote Control and Setting Menu

5.1 Functions of remote control

<Remark> The below functions are listed alphabetically.



Item	Description
◀,▶,▲,▼	Move the lens
Back Light	Turn on/off back light compensation
Camera select	Choose camera 1 ~ 3
Focus-Manual / Far/Near	Turn on manual focus to adjust the focal length
Focus-Auto	Auto Focus
Freeze	Freeze the screen
Home-Enter	Go back to the main page / Execute
Info	Status information
L/R Direction Set	L/R Direction / Normal
Menu	Display OSD menu
Mirror	Rotate the image (OFF / Mirror / Flip / Rotate)
Pan/Tilt Reset	Clear the Pan / Tilt setting
Picture	Switch image effect (OFF / Neg / B&W)
Power	Power Switch
Preset	Appoint an ID (0 ~ 9) to save the current position data
Reset	Appoint an ID (0 ~ 9) to delete the current position data
Zoom-Fast	Adjust image size
Zoom-Slow	Fine-tune image size

5.2 Setting Menu

<Remark> Press **[Menu]** on the **remote control** to enter the setting menu; the **bold underlined** values in the following table are defaults.

1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values		Function Descriptions
Exposure	**Mode**	1. **Full Auto** 2. Shutter Pri 3. Iris Pri 4. Manual 5. White Board		Exposure mode setting
	Exposure Comp.	On / **Off**		AE Level
	Exposure Comp. Level	-6~**C**~4		The value can be adjusted only after **Exposure Comp.** is activated
	Spot Light	On / **Off**		The value can be adjusted when the mode is set to **Full Auto** or **Shutter Pri**
	Spot Light Position	X(0~8)Y(0~6)		**The value can be adjusted only after Spot Light is activated**
	Shutter Pri	60/30 mode	50/25 mode	Shutter priority setting
		1/10000	1/10000	
		1/5000	1/5000	
		1/3000	1/3000	
		1/2500	1/2500	
		1/2000	1/1750	
		1/1500	1/1250	
		1/1000	1/1000	
		1/725	1/600	
		1/500	1/425	
		1/350	1/300	
		1/250	1/215	

		1/180	1/150	
		1/120	1/120	
		1/100	1/100	
		1/90	1/75	
		1/60	**1/50**	
		1/30	1/25	
		1/15	1/12	
		1/8	1/6	
		1/4	1/3	
		1/2	1/2	
		1/1	1/1	
	Iris Pri	1. **F1.6** 2. F2 3. F2.2 4. F2.7 5. F3.2 6. F3.8 7. F4.5 8. F5.4 9. F6.3 10. F7.8 11. F9 12. F11 13. F13 14. F16 15. F18		Iris setting

	Manual Gain	1. **0dB** 2. 2 dB 3. 4 dB 4. 6 dB 5. 8 dB 6. 10 dB 7. 12 dB 8. 14 dB 9. 16 dB 10. 18 dB 11. 20 dB 12. 22 dB 13. 24 dB 14. 26 dB 15. 28 dB 16. 30 dB		Manually set the gain
	Manual Speed	60/30 mode	50/25 mode	Manually set the shutter
		1/10000	1/10000	
		1/5000	1/5000	
		1/3000	1/3000	
		1/2500	1/2500	
		1/2000	1/1750	
		1/1500	1/1250	
		1/1000	1/1000	
		1/725	1/600	
		1/500	1/425	
		1/350	1/300	
		1/250	1/215	
		1/180	1/150	
		1/120	1/120	
		1/100	1/100	
		1/90	1/75	

		1/60	**1/50**	
		1/30	1/25	
		1/15	1/12	
		1/8	1/6	
		1/4	1/3	
		1/2	1/2	
		1/1	1/1	
	Manual Iris	1. **F1.6** 2. F2 3. F2.2 4. F2.7 5. F3.2 6. F3.8 7. F4.5 8. F5.4 9. F6.3 10. F7.8 11. F9 12. F11 13. F13 14. F16 15. F18		Manually set the iris
	Gain Limit	1. 8 dB 2. 10 dB 3. 12 dB 4. 14 dB 5. 16 dB 6. 18 dB 7. 20 dB 8. 22 dB 9. 24 dB 10. 26 dB 11. 28 dB 12. **30dB**		Max. limit value of electron gain

	Iris Limit	1. F1.6 2. **F2.2** 3. F3.2 4. F4.5 5. F6.3 6. F9 7. F13 8. F18	Max. limit value of iris
	WDR	1. **Off** 2. 1 3. 2 4. 3 5. 4 6. 5	WDR settings
	Anti Flicker	1. 50Hz 2. 60Hz 1. **Off**	Set the image sync frequency during capturing
White Balance	**Mode**	1. **Auto** 2. Indoor 3. Outdoor 4. One Push WB 5. ATW 6. Sodium Lamp 7. Manual 8. 3000K 9. 4300K 10. 5000K 11. 6500K 12. 8300K 13. WideAuto	Select the color temperature mode 1. 4000k ~ 7000k 2. 3200k 3. 5800k 4. 1700k ~ 10000k 5. 1700k ~ 10000k 6. 2800k 7. Custom 8. 3000K 9. 4300K 10. 5000K 11. 6500K 12. 8000K 13. 3000k ~ 7000k
	One Push Trigger	**ENTER**	One push trigger
	Manual Red	0~ **C** ~60	Adjustable when the white balance mode is set to **Manual**

	Manual Blue	0~ **C** ~60	Adjustable when the white balance mode is set to **Manual**
Picture	**Picture effect**	1. **Off** 2. Neg 3. B & W	Set the picture effect
	Sharpness	1~**A**~16	Adjust the **sharpness** of the image
	2D NR	1. **Auto** 2. Off 3. 1 4. 2 5. 3 6. 4 7. 5	2D noise reduction settings
	3D NR	1. Off 2. **LOW** 3. Typ 4. Max 5. Auto	3D dynamic noise reduction settings
	Image Mode	1. Mode1 2. Mode2 3. Mode3 4. Mode4 5. **Mode5** 6. Mode6 7. Custom	The user may customize his/her desired image mode
	Image Mode Load	1. **Mode1** 2. Mode2 3. Mode3 4. Mode4 5. Mode5 6. Mode6	Adjustable when the **Image mode** is set to **Custom**. After selected, the corresponding **Image mode** parameters will be read and applied to **Custom**
	Saturation	0~ **A** ~25	Adjustable when the **Image mode** is set to **Custom mode**

	Hue	0~ **A** ~14	Adjustable when the **Image mode** is set to **Custom mode**
	Gamma	0~ **A** ~3	Adjustable when the **Image mode** is set to **Custom mode**
	Skin Tone	1~ **A** ~5	Skin tone settings; adjustable when **Image mode** is set to **Custom mode**
	Brightness	0~ **A** ~14	Adjustable when the **Image mode** is set to **Custom**
	Contrast	0~ **A** ~14	Contrast adjustment; Adjustable when the **Image mode** is set to **Custom**
	Black Level	1. **Off** 2. Type 1 3. Type 2 4. Type 3	Shadow details and transparency adjustment, adjustable when the **Image mode** is set to **Custom**
Pan Tilt Zoom	**Pan/Tilt Limit**	On / **Off**	Turn on/off the angle limit setting
	Pan Right Limit	0~**170**	Limit the right angle
	Pan Left Limit	**-170**~0	Limit the left angle
	Tilt UP Limit	0~**90**	Limit the upward angle
	Tilt Down Limit	**-30**~0	Limit the downward angle
	Pan Flip	On / **Off**	Activate the reverse Pan command
	Tilt Flip	On / **Off**	Activate the reverse Tilt command
	Pan/Tilt Speed	**Normal**/Smooth	Adjust Pan/Tilt Speed

	Preset Speed	1. 80 deg/sec 2. 120 deg/sec 3. **160 deg/sec** 4. 200 deg/sec 5. 300 deg/sec	Set the rotation speed of the cradle head when Preset is executed
	PTZ Speed Comp	**On** / Off	Set the Pan/Tilt Moving speed is subject to the zoom position
	D-Zoom Limit	**x1**~x12	Limit the D-zoom multiple
D-Effect	**Mirror**	1. **Off** 2. Mirror 3. Flip 4. Mirror + Flip	Set the mode at which the image is turned
Auto Focus	**AF Sensitivity**	1. LOW 2. **Middle** 3. High	Select the AF triggering speed. The higher the speed is, the faster AF is triggered
	AF Frame	**Full Frame**/ Center	AF frame setting, when central area was set as AF frame, focusing will be on the center of the screen. When Full Frame was set as AF frame, focusing will be calculated based on the full screen
System	**Video Type**	SDI **DVI-I**	Select video output type
	Prompt	On / **Off**	Turn on/off the prompt information on the display
	IR Receive	**On** / Off	Turn on/off the infrared reception
	Language	**English** / Chinese	Language
	Initial Position	**Last MEM Off** / 1st Preset On	Select the camera lens to return to the last operated position or the first preset position after POWER ON
	Control Device	Encoder / **Controller**	Control Device setting, **Controller:** for joystick **Encoder:** for tracking system

	Motionless Preset	On / **Off**	When the function is enabled, the screen will Freeze when Preset is executed. Freeze will be released after Preset is completed.
	Control Port	**RS-232C**/RS-422	Choose whether the control interface used is RS-232C or RS-422
	Protocol	**VISCA** / Pelco D	
	Baud Rate	**9600**/38400	Choose the transmission speed of the control signal
	VISCA Address	**0**~7	
	Pelco D Address	1~**C**~255	The Protocol set to Pelco D allows the camera ID address to be assigned
	Output Mode	1. **1920x1080/60p** 2. 1920x1080/50p 3. 1920x1080/30p 4. 1920x1080/25p 5. 1920x1080/60i 6. 1920x1080/50i 7. 1280x720/60p 8. 1280x720/50p 9. 1280x720/30p 10. 1280x720/25p 11. 1080/59.94p 12. 1080/59.94i 13. 1080/29.97p 14. 720/59.94p 15. 720/29.97p	Choose the output resolution
	Factory Reset	On / **Off**	Resume the factory default setting
Status			Display the current setting status

Chapter 6 Descriptions of Major Functions

6.1 I would like to switch to VC-A51S

1. Press **[Camera 1 ~ 3]** on the **remote control** to select VC-A51S.
   - **Camera 1 ~ 3 is selected with IR SELECT.**

6.2 I would like to save the current lens position data

1. Hold **[Preset + ID]** on the **remote control** to save the current position data.
   - **ID shall be a digit [0 ~ 9].**
   - **Use VISCA Command to store position data to [0 ~ 127]**

6.3 I would like to clear the saved position data

1. Hold **[Reset + ID]** on the **remote control** to clear the given position data.
   - **ID shall be a digit [0 ~ 9].**
   - **Use VISCA command to clear position data stored in [0 ~ 127]**

6.4 I would like to turn on the back light compensation function

1. Press **[Back Light]** on the **remote control** to turn on or turn off the back light compensation

6.5 I would like to adjust the shooting angle of the lens

1. Press **[Tilt ▲]** or **[Tilt ▼]** on the **remote control** to adjust the angle upward or downward.
2. Press **[Pan ►]** or **[Pan ◄]** on the **remote control** to adjust the angle to right or left.
3. Press **[Pan - Tilt Reset]** on the **remote control** to reset the angle to the center point.

6.6 I would like to hide the preset image switch (Motionless Preset)

1. Press **[MENU]** to activate the setting menu.

2. Press **[►]** or **[◄]** to select **[System]**.
3. Press **[ENTER]** to activate.
4. Press **[▲]** or **[▼]** to select **[Motionless Preset]**.
5. Press **[ENTER]** to activate.
6. Press **[►]** or **[◄]** to select **[Off / On]**.
7. Press **[MENU]** to exit.

6.7 I would like to zoom in/out images

6.7.1 Adjust image size

1. Press **[Fast +]** on the **remote control** to zoom in images.
2. Press **[Fast -]** on the **remote control** to zoom out images.

6.7.2 Fine-tune image size

1. Press **[Slow +]** on the **remote control** to zoom in images.
2. Press **[Slow -]** on the **remote control** to zoom out images.

6.8 I would like to adjust the focal length

6.8.1 Auto tune

1. Press **[AF]** on the **remote control** to adjust automatically.

6.8.2 Manual focus

1. Press **[MF]** on the **remote control** to turn on the manual focus function.
2. Press **Focus - [+]** or **Focus - [-]** to adjust.

6.9 I would like to adjust the AF sensitivity

Triggering speed of focus. The higher the speed is, the faster focus is triggered

To shoot fast-moving objects, **AF Sensitivity** can be set to **[High]** or **[Medium]**, which is applicable to quick focus.

When the environment is too dark to enable auto focus or fixed objects have to be shot in different brightness, **AF Sensitivity** can be set to **[Low]**.

1. Press [MENU] to activate the setting menu.
2. Press [►] or [◄] to select [Auto Focus].
3. Press [ENTER] to activate.
4. Press [▲] or [▼] to select [AF Sensitivity].
5. Press [ENTER] to activate.

6. Press [►] or [◄] to select [High / Middle / Low].
7. Press [MENU] to exit.

6.10 I would like to set the image mode

1. Press **[Picture]** on the **remote control** to switch [Off / Neg / B&W].

6.11 I would like to freeze images

1. Press **[Freeze]** on the **remote control** to freeze the current image on the display.

6.12 I would like to rotate the image

1. Press **[Mirror]** on the **remote control** to switch [Off / Mirror / Flip / Mirror + Flip].

6.13 I would like to change the camera direction

1. Press **[L/R Direction Set]** on the **remote control** to switch [L/R Direction / Off / Normal].

6.14 I would like to display the current status

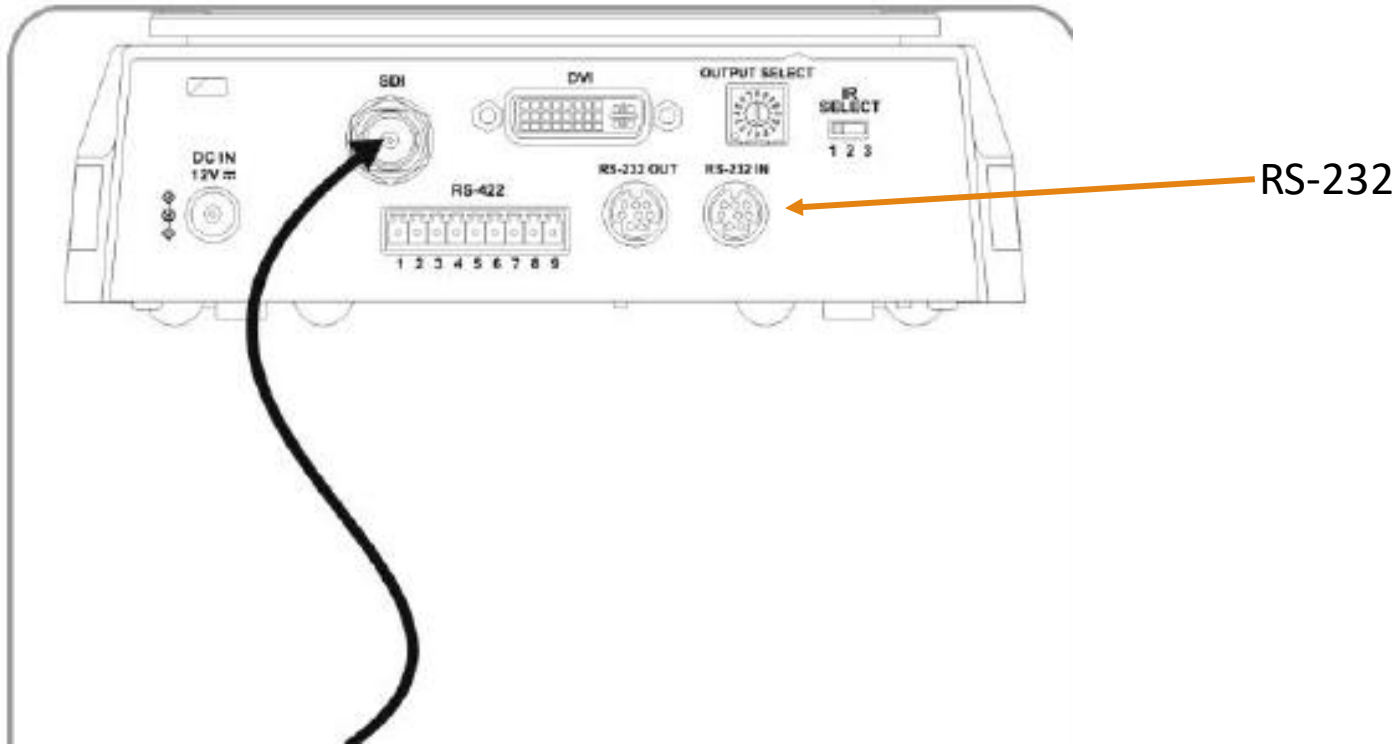
1. Press **[Info]** on the **remote control** to display the current status information.

6.15 I would like to reset to the original setting

1. Press **[MENU]** to activate the setting menu.
2. Press [►] or [◄] to select **[System]**.
3. Press **[ENTER]** to activate.
4. Press [▲] or [▼] to select **[Factory Reset]**.
5. Press **[ENTER]** to activate.
6. Press [►] or [◄] to select **[On]**.
7. Press **[ENTER]** to execute.

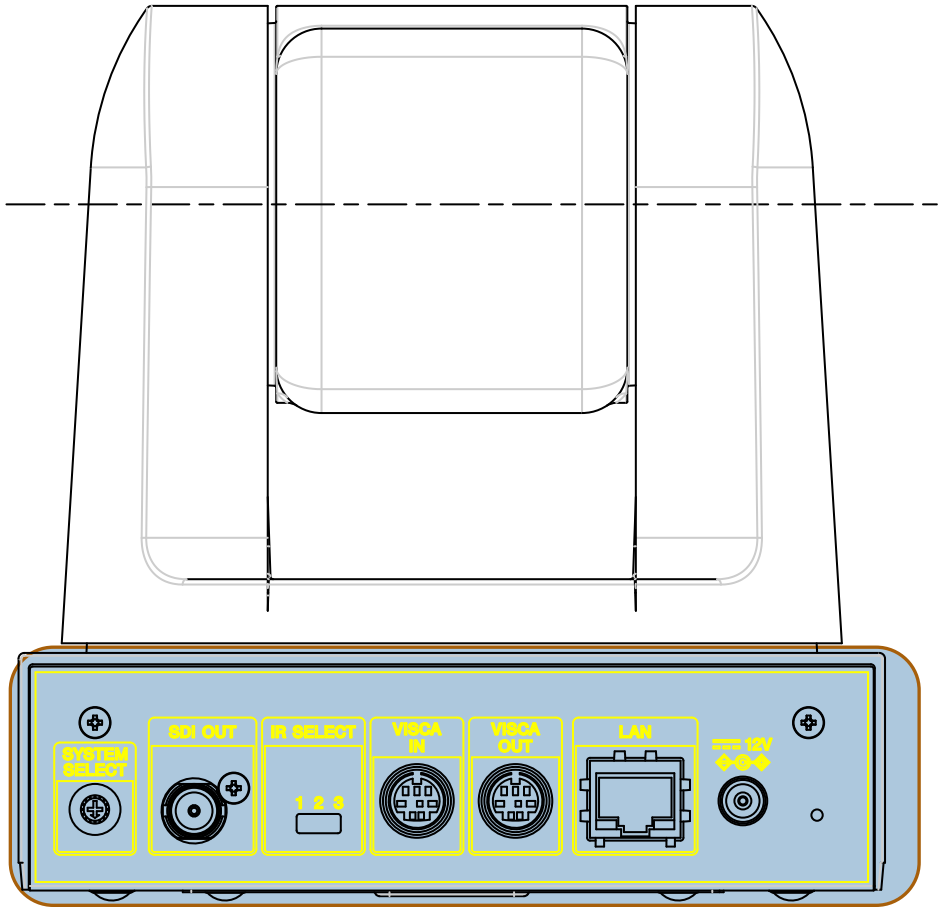
Section 6 Appendix 4 diagrams

APPENDIX 4



Lumens Camera RS-232 DIN connection

Sony Camera


SYSTEM SELECT
SDI OUT
IR SELECT
1 2 3
VISCA IN
VISCA OUT
LAN
12V

Sony SRG 120DS

