SONY

BRC Series System Guide

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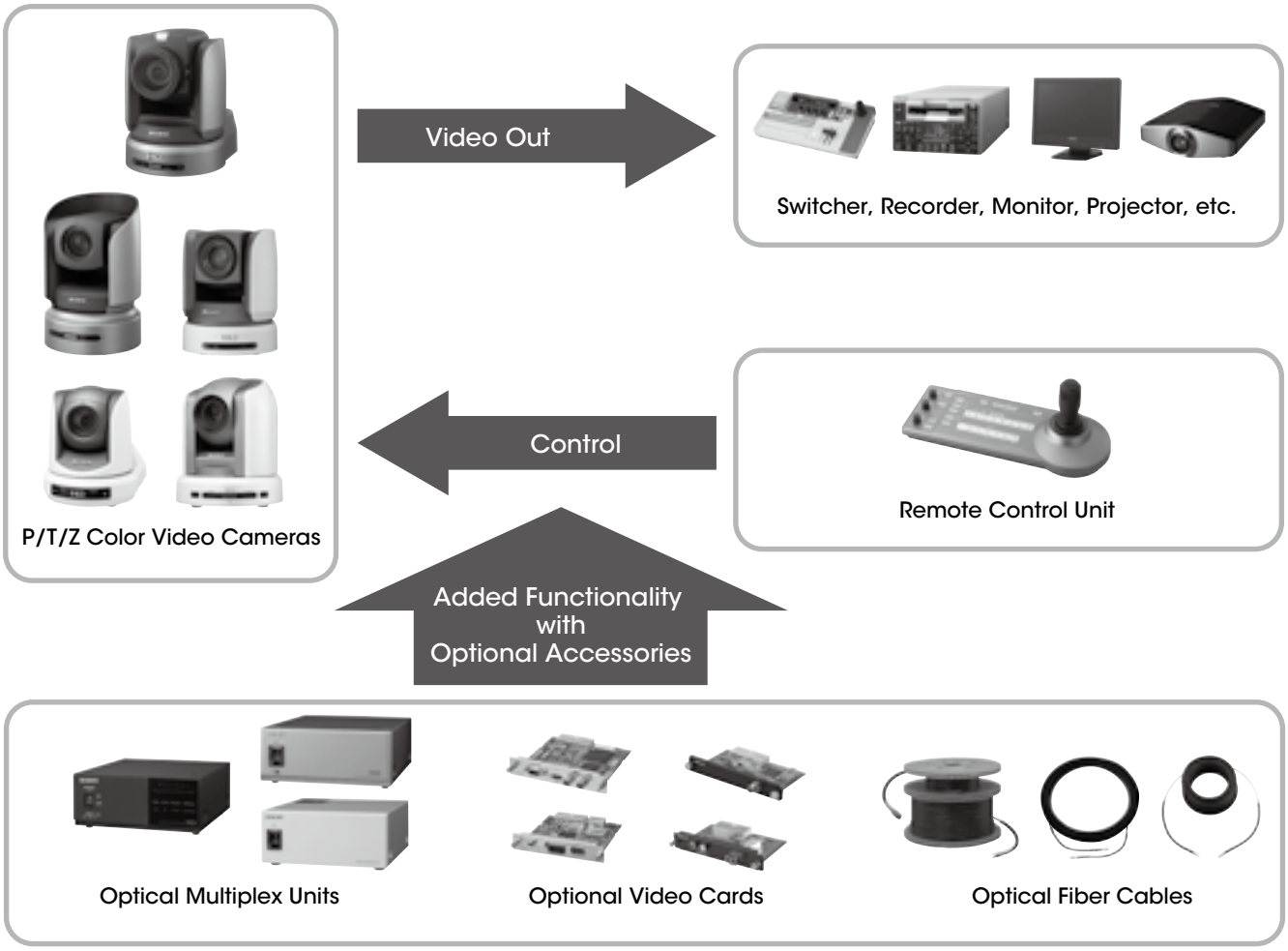
1 What is the BRC Series?

The BRC Series consists of five Pan/Tilt/Zoom (P/T/Z) cameras – the BRC-H900, BRC-H700, BRC-Z700, BRC-Z330, and BRC-300/300P. They offer wide and smooth pan/tilt/zoom capabilities together with exceptional picture quality from SD to Full HD images. You can remotely control these cameras using the RM-BR300 Remote Control Unit. As a flagship model, the BRC-H900 delivers greatest sensitivity (F10) and horizontal resolution (more than 1,000 TV lines in HD-SDI output) to meet the needs of highly quality-conscious applications. The BRC Series is perfect for a variety of remote video shooting applications, and each camera integrates easily into a wide range of indoor and outdoor systems.
These features enable more and more users to enjoy the benefits of BRC Series cameras, particularly in education, broadcast, bridal, and corporate applications. And with their advanced remote capabilities, these cameras also enable a reduction in manned operation.



*The RM-IP10 is compatible with the BRC-H900, BRC-Z700, and BRC-Z330 only.

Applications

Corporate/Boardroom

BRC Series cameras are excellent for various business communication applications, such as videoconferencing, corporate training, and transmission of managers' regular speeches. Each of the cameras in this series offers particular features and advantages, providing a variety of cameras for any application. The cameras are easy to operate and can be quickly reset after each use simply by touching a button on the supplied controller – which recalls pre-specified positions for capturing speech and switching scenes.

Auditorium/Concert Hall

With its pan/tilt/zoom (P/T/Z) capability, a single camera can capture a wide shooting range during an entire live performance, including audience shots. Therefore, with the BRC Series, fewer cameras and camera operators are required, resulting in huge cost savings. These cameras make it easy to get close-ups of performers from locations that are typically difficult for a camera operator to reach. Additionally, each camera's compact size and quiet movement doesn't distract the audience from the performance.

City Council

Remotely controlled by the RM-BR300, BRC Series cameras quickly capture all of the actions at council meetings or trials. Each camera provides simple, streamlined operation by offering multiple presets which pre-define P/T/Z positions.

Sports Events

With high-speed and extremely smooth pan/tilt movement, BRC Series cameras can follow the quick, spontaneous flow of sports action. With cameras installed in high positions, operators can obtain extensive views of each event, and capture shots at unique angles, typically very difficult to achieve with conventional shooting. Also, optical fiber connection (max. 2,000 m) achieves long-distance data transfer and enables single-operator broadcasting.

Studio

The BRC Series is also ideal for use in the broadcast industry. The BRC-H900, BRC-H700, BRC-Z700, and BRC-Z330 can output HD-SDI signals*1 – a necessity for highly demanding broadcasters who seek uncompromising picture quality. With flexible installation, these cameras can be easily integrated into a working studio with tripods or ceiling brackets. For the wide angles required in studio shooting, wide conversion lenses are available*2. And there are numerous other benefits, including quiet and smooth P/T/Z movement, a tally indicator, cost-efficiency, and more.

*1 The BRC-H700, BRC-Z700, and BRC-Z330 require optional video cards.
*2 Wide conversion lenses are available for the BRC-Z700 and BRC-300.

Education

By deploying BRC Series cameras, teachers can offer students new educational opportunities anytime and anywhere. With the real-time distribution of lectures and other educational content, academic institutions can deliver e-learning classes, and professors can efficiently share their opinions and collaborate via networked communication.

Houses of Worship

By using large screens in combination with highly sensitive BRC Series cameras, clear video images can be delivered with accurate color reproduction. Attendees can become more involved in the service and follow ongoing events better than ever before. With a variety of peripheral components, a range of user-friendly systems can be designed to suit the size and budget of every organization.

Weddings

Pre-installed BRC Series cameras are ideal for capturing wedding ceremonies since their silent movement will not disturb the ceremony. With high picture performance and zooming capabilities, these cameras can capture natural facial expressions and, for example, the graceful movements of the bride. Also, due to their compact and sleek design, these cameras blend easily into the surrounding environment.

2 Product Lineup

BRC-H900

The BRC-H900 is a flagship model, equipped with three 1/2-type "Exmor" 3CMOS sensor. This camera offers greatest performance of minimum illumination, as low as four lux, among BRC series cameras.* Therefore it delivers excellent quality HD and SD picture even in dark environment. Furthermore, with the use of RM-IP10 Remote Controller and BRBK-IP10 IP Control Card, the camera can be controlled through IP network. This flexibility of installation enables to install up to 112 units of cameras and up to five units of RM-IP10 controller depending on customer's requirements.

* At 50IRE, F1.9, +24 dB.

BRC-H700

Equipped with three 1/3-type HD CCDs, the BRC-H700 offers excellent picture quality with high sensitivity and a high resolution of 1,070,000 effective pixels. This camera has the best sensitivity of the BRC Series; it therefore delivers superior performance in dimly lit environments, such as concert or wedding halls. Moreover, the camera offers the widest viewing angle of the BRC Series, delivering wider images of each scene and providing a complete picture of ongoing events.

BRC-Z700

The BRC-Z700 offers a resolution of 1,040,000 effective pixels by deploying three 1/4-type ClearVid™ CMOS image sensors in combination with Sony-developed DSP technology. This camera includes a 20x optical auto-focus zoom lens with an optical image stabilizer. The perfect choice for long-distance-shooting applications, such as sporting coverage, this camera provides dual SD/HD outputs, enabling users to smoothly shift towards adopting a total HD system.

BRC-Z330

Equipped with single 1/3-type 2-megapixel CMOS image sensor, the BRC-Z330 delivers stunning HD images and SD images. This camera enables 1080i and 720p to be integrated in various HD systems. It also outputs SD signals simultaneously for further system flexibility; this is particularly useful when instigating a system upgrade. Added to this, the camera's quiet movement, compact size, light weight, and stylish design broaden the options when developing ideal applications.

BRC-300/300P

The standard-definition BRC-300 comes equipped with three 1/4.7-type Advanced HAD™ CCD sensors. This camera delivers dependable picture quality and is the best for costefficient SD applications. It can capture images in 4:3 and 16:9 aspect ratios, the latter providing a wider viewing angle.

3 Key Features

All-in-one P/T/Z Design

Stylish design suitable for most environments

The sleek design can complement almost any environment, including the interior décor of houses of worship, wedding halls, public spaces, and more.

Unobtrusive design ideal for reality shows and live events

The unobtrusive design of the BRC Series allows speakers and audiences to concentrate on discussions and lectures without being distracted. These inconspicuous cameras help to capture natural expressions and behavior.

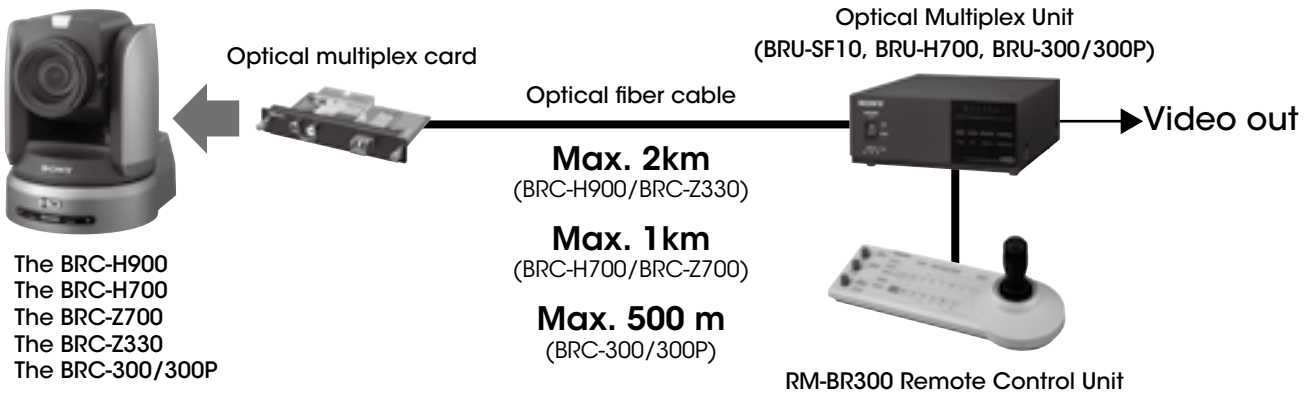
Cost Efficiency

While each camera in the BRC Series incorporates CCD or CMOS image sensor, 12x to 20x zoom lenses, and P/T/Z movements, they are also reasonably priced, and are ideal for remote video shooting applications.

With outstanding functionality and a large number of peripheral components to choose from, you can design a variety of user-friendly systems.

Long-distance Operation Using an Optical Fiber Cable

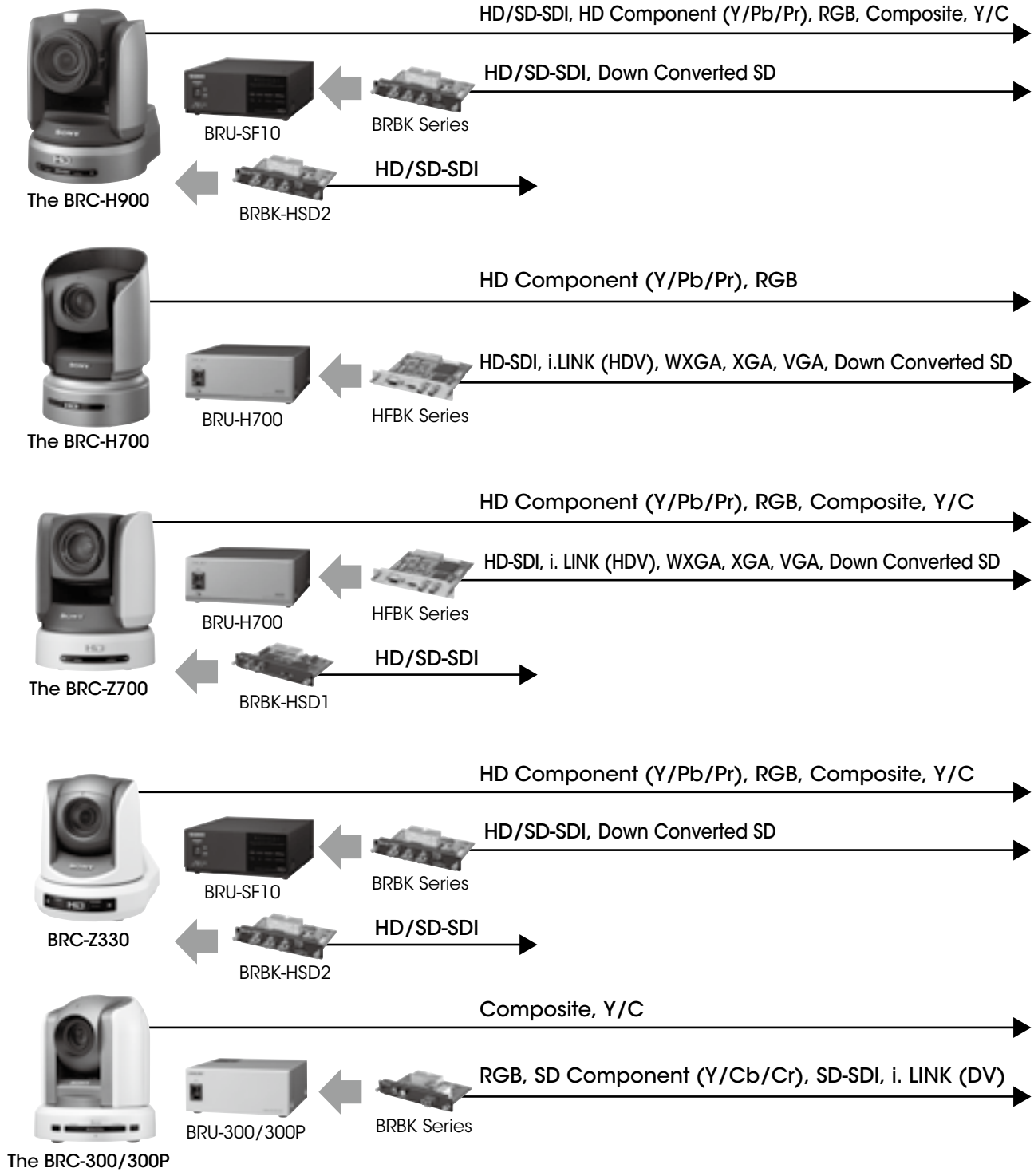
Uncompressed digital data – including video, external sync, and camera control signals – can be transmitted over a long distance using an optical multiplex unit, an optical multiplex card, and an optical fiber cable. The maximum distance between the optical multiplex unit and the camera is 2000 m for the BRC-H900 and BRC-Z330, 1000 m for the BRC-H700 and BRC-Z700, and 500 m for the BRC-300/300P.



Note When using an optical fiber connection, optional video cards are used with the optical multiplex unit to provide a variety of video signals. In this configuration, camera video outputs are also available from the camera unit itself. When you use an optional multiplex card inserted into the camera, you cannot control the camera directly by the RM-BR300. You can control the camera only from the RM-BR300 through the BRU-SF10, BRU-H700 or BRU-300/300P.

Versatile Video Outputs

By using optional video cards with the BRC Series, a variety of video signals can be output, enabling a wide range of system configurations.



Simultaneous Control of Multiple Cameras

The RM-IP10 Remote Control Unit can operate up to 112 units of BRC cameras (BRC-H900, BRC-Z700, and BRC-Z330) though an IP network. The BRS-200 Remote Camera Operating Switcher and the RM-BR300 Remote Control Unit can be used to operate up to seven cameras.

RM-IP10
Remote Control Unit (IP)

RM-BR300
Remote Control Unit (VISCA)

BRS-200
Remote Camera Operating Switcher

Other Features

Flexible installation

The BRC Series can be placed on a desktop, mounted on the ceiling, used with a tripod, or installed in an outdoor housing kit, depending on your applications.

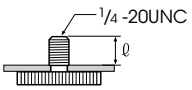
Flat surface

Ceiling Mount

Placed on a tripod

Outdoor Housing Kit

Note BRC Series cameras can be ceiling-mounted with a supplied ceiling bracket and screws. For use with a tripod, the camera has a standard ¼-20 UNC receptor. For the tripod and the outdoor housing kit, please contact to the regional headquarters.



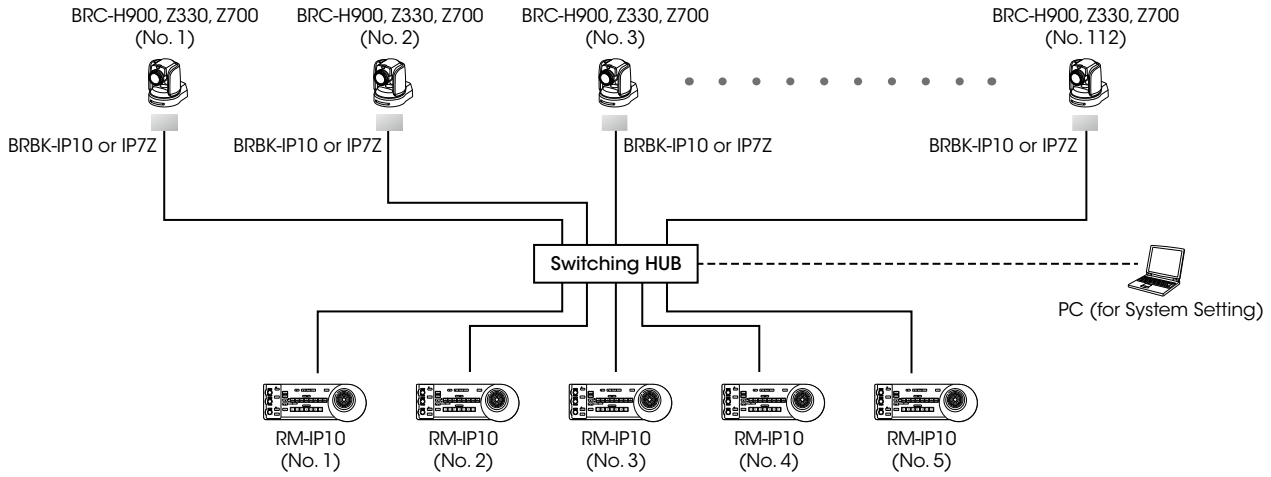
ℓ = 4.5 – 7 mm
ℓ = 0.18 – 0.27 inches

Multiple presets

The BRC-H900, BRC-H700, BRC-Z700, and, the BRC-Z330 each have sixteen presets and the BRC-300/300P has six presets to which pre-defined pan/tilt/zoom positions and other parameters can be allocated. These presets can be recalled at the touch of a button of the BRS-200, the RM-BR300, or the IR remote commander unit to easily capture video from pre-specified areas.

IP Control

The BRC-H900, BRC-Z700, and BRC-Z330 can be controlled though an IP network with the use of an RM-IP10 IP Remote Controller and BRBK-IP10 or BRBK-IP7Z IP Control Card. This functionality allows for flexible configurations, and enables the installation of up to 112 units of BRC cameras and up to five units of RM-IP10 controller depending on customer requirements.



RM-IP10*1

IP Remote Controller

- Comfortable P/T/Z operation with the optical three-axis joystick.
- Versatile camera adjustment by simple panel operation.
- The use of IP technology allows flexible installation and easy operation.
- Preset feature saves camera settings (up to 16 positions).

*1: The RM-IP10 is compatible with the BRC-H900, BRC-Z700, and BRC-Z330 only.

BRBK-IP10*2

IP Control Card

- The camera can be controlled by IP connection using the RM-IP10 IP Remote Controller.
- Output of images shot by the camera as HD-SDI signals that conform to the SMPTE292M serial digital interface standards or as down-converted SD-SDI signals that conform to the SMPTE259M serial digital interface standards.

*2: The BRBK-IP10 is compatible with the BRC-H900 and BRC-Z330 only.

BRBK-IP7Z*3

IP Control Card

- The camera can be controlled by IP connection using the RM-IP10 IP Remote Controller.
- Output of images shot by the camera as HD-SDI signals that conform to the SMPTE292M serial digital interface standards or as down-converted SD-SDI signals that conform to the SMPTE259M serial digital interface standards.

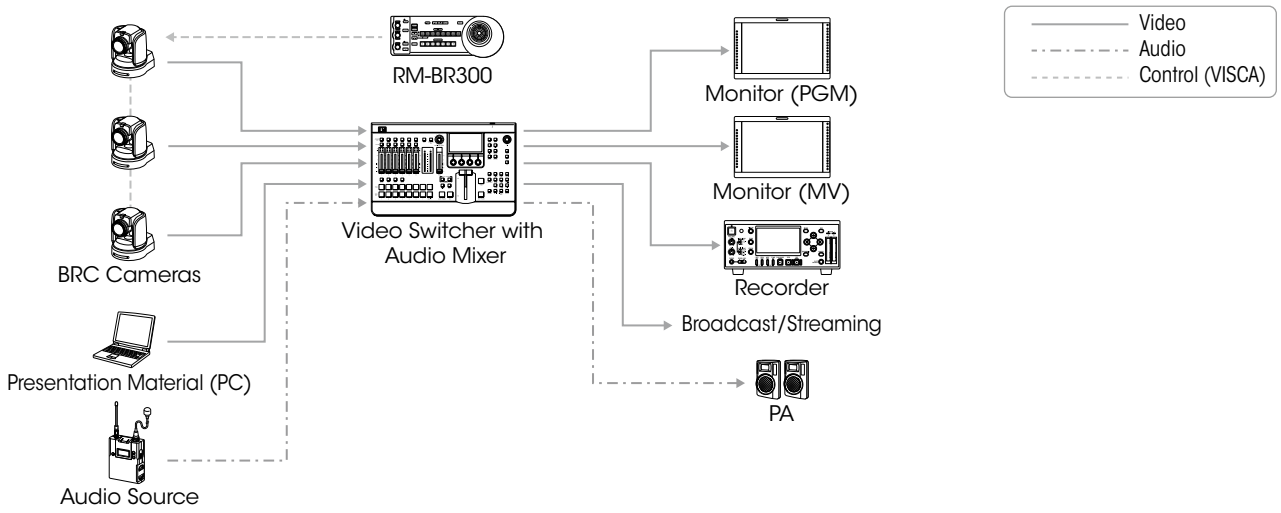
*3: The BRBK-IP7Z is compatible with the BRC-Z700 only.

4 System Configuration

You can configure a variety of systems to meet your application needs by choosing HD and/or SD components. Users can choose either HD or SD system components.

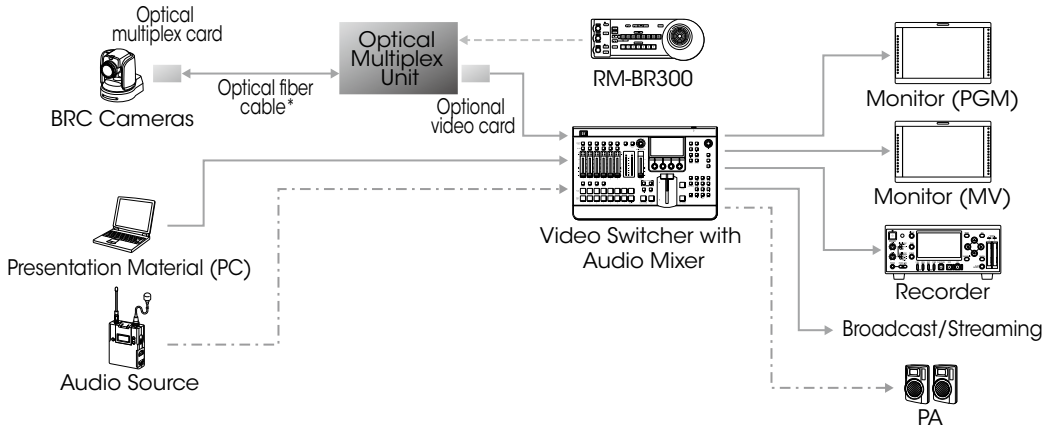
<table>
<tr><th></th><th colspan="5">BRC and BRU System</th></tr>
<tr><th></th><th>BRC-H900
  </th><th>BRC-H700
  </th><th>BRC-Z700
  </th><th>BRC-Z330
  </th><th>BRC-300/300P
  </th></tr>
<tr><td>Wide Conversion Lens</td><td>—</td><td>—</td><td>—</td><td>—</td><td>VCL-0737W  </td></tr>
<tr><td>Optical Multiplex Card (inserted to the BRC Series)</td><td>BRBK-SF1</td><td>BRBK-H700</td><td>BRBK-MF1</td><td>BRBK-SF1</td><td>BRBK-303</td></tr>
<tr><td>Optical Fiber Cable</td><td>CCFC-S200 (Single-mode)  </td><td colspan="2">CCFC-M100HG (Multi-mode)  </td><td>CCFC-S200 (Single-mode)  </td><td>CCFC–M100 (Multi-mode)  </td></tr>
<tr><td>Optical Multiplex Unit</td><td>BRU-SF10 (Supports Single-mode optical fiber)  </td><td colspan="2">BRU-H700 (Supports Multi-mode optical fiber)  </td><td>BRU-SF10 (Supports Single-mode optical fiber)  </td><td>BRU-300/ 300P (Supports Multi-mode optical fiber)  </td></tr>
<tr><td rowspan="4">Optional Video Card (inserted to the BRC Series)</td><td rowspan="2">BRBK-HSD2
HD/SD-SDI</td><td>HFBK-HD1
HD-SDI, HD Component (Y/Pb/Pr), RGB</td><td rowspan="3">BRBK-HSD1
HD-SDI, SD-SDI</td><td rowspan="2">BRBK-HSD2
HD/SD-SDI</td><td>BRBK-301
Composite, Y/C, SD Component (Y/Cb/Cr), RGB</td></tr>
<tr><td>HFBK-SD1
SD-SDI, Composite, Y/C, SD Component (Y/Cb/Cr), RGB</td><td rowspan="2">BRBK-302
SD-SDI</td></tr>
<tr><td rowspan="2">BRBK-SA1
Analog SD Output</td><td>HFBK-TS1
i.LINK (HDV)</td><td rowspan="2">BRBK-SA1
Analog SD Output</td></tr>
<tr><td>HFBK-XG1
WXGA, XGA, VGA</td><td>BRBK-304
i.LINK (DV)</td></tr>
<tr><td>IP Control Card</td><td>BRBK-IP10  </td><td>—</td><td>BRBK-IP7Z  </td><td>BRBK-IP10  </td><td>—</td></tr>
<tr><td>Remote Control Unit (IP)</td><td>RM-IP10  </td><td>—</td><td>RM-IP10  </td><td>RM-IP10  </td><td>—</td></tr>
<tr><td>Remote Control Unit (VISCA)</td><td colspan="5">RM-BR300  </td></tr>
</table>

Live Broadcast_01

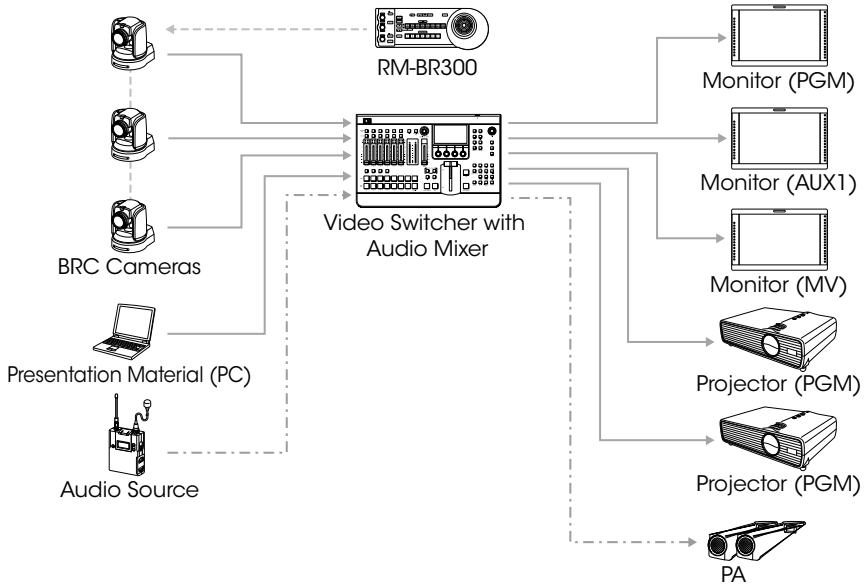


Live Broadcast_02

* There are two types of optical fiber cable (single-mode/Multi-mode). Please refer to the specifications.



Presentation_01



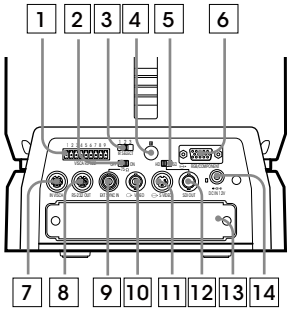
5 Location and Function of Parts

5.1 BRC Series of Cameras

The following is a summary of the location and function of BRC-H900, BRC-H700, BRC-Z700, BRC-Z330, and BRC-300/300P parts.

5.1.1 BRC-H900

Rear



1 VISCA RS-422 connector

2 75 Ω termination switch

This switch is used when an external sync signal is used. Set it to OFF when this camera is in the middle of a daisy-chain connection of multiple cameras. Set it to ON when the camera is at the end of a daisy-chain connection or when nothing is connected to the EXT SYNC IN connector on the camera.

3 IR SELECT switch

Select the camera number when you operate multiple cameras with the same Remote Commander.

4 Remote sensor

This is the sensor for the supplied Remote Commander.
This remote sensor does not function when IMG FLIP is set to ON in the SYSTEM menu.

5 HD/SD select switch

Outputs an SD-SDI signal from the SDI connector when the switch is set to SD, or an HD-SDI signal from the SDI connector when the switch is set to HD.

Note Set the switch before turning the camera on.

6 RGB/COMPONENT connector

Pin No.	Signal	Pin No.	Signal
1	Pr/R	9	NC
2	Y/G	10	GND
3	Pb/B	11	GND
4	GND	12	NC
5	GND	13	HD-OUT
6	GND	14	Tri-level Sync/Bi-level VD
7	GND	15	NC
8	GND		

7 VISCA RS-232C IN connector

Connect to the RM-BR300 Remote Control Unit (not supplied). When you connect multiple cameras, connect it to the VISCA RS-232C OUT connector of the previous camera in a daisy-chain connection.

8 VISCA RS-232C OUT connector

When you connect multiple cameras, connect it to the VISCA RS-232C IN connector of the next camera in a daisy-chain connection.

9 EXT SYNC IN connector

10 VIDEO connector

11 S VIDEO connector

12 SDI connector

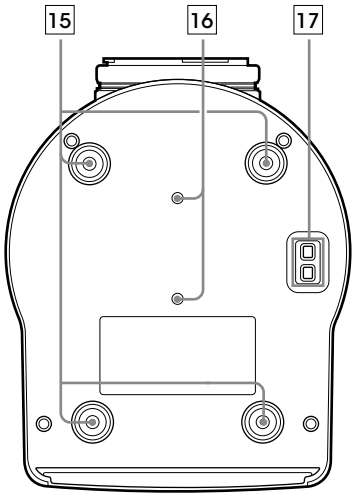
Outputs the video signal from the camera as an HD/SD-SDI signal.

Supplies down-converted SD-SDI signals that conform to the SMPTE 259M serial digital interface standards, or HD-SDI signals that conform to the SMPTE 292 serial digital interface standards. Select HD-SDI or SD-SDI signals with the HD/SD select switch.

13 Card slot

14 DC IN 12V connector

Bottom

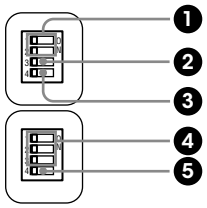


15 Ceiling bracket mounting screw holes

16 Tripod screw holes (1/4-20UNC)

17 BOTTOM switches

Setting of the BOTTOM switches



❶ Switch 1, 2 (signal format selector)

Depending on the setting of the Switch 1, 2, the signal format is changed as follows:

Signal format	1080/59.94i	1080/50i	720/59.94p	720/50p
Switch 1	OFF	ON	OFF	ON
Switch 2	OFF	OFF	ON	ON

❷ Switch 3 (RS-232C/RS-422 selector)

Set to ON for RS-422, or OFF for RS-232C.

❸ Switch 4 (Communication baud rate selector)

Set to ON for 38,400 bps, or OFF for 9,600 bps.

❹ Switch 1, 2, 3 (Camera address selectors)

Set the address of the camera.

Normally set to "0". With this setting, addresses are assigned to the cameras automatically in the connected order by pressing the POWER button while holding down the RESET button on the RM-BR300 Remote Control Unit.

You can assign the camera address "1" to "7" manually by setting these selectors as follows:

Camera address	0	1	2	3	4	5	6	7
Switch 1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 3	OFF	OFF	OFF	OFF	ON	ON	ON	ON

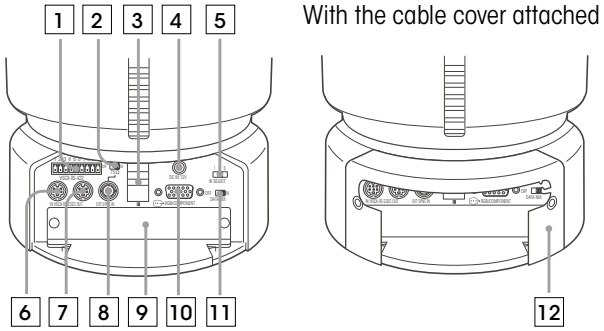
❺ Switch 4 (Infrared signal output switch)

Set to ON to enable an infrared signal output, or OFF to disable the output.

Note Please note that the same camera address cannot be assigned to two or more different cameras. Furthermore, you must set the switches before you turn on camera power.

5.1.2 BRC-H700

Rear



1 VISCA RS-422 connector

2 75 Ω termination switch
This switch is used when an external sync signal is utilized. Set it to OFF when the camera is in the middle of a daisy-chain connection of multiple cameras. Set it to ON when the camera is at the end of a daisy-chain connection.

3 Remote sensor
This is the sensor for the supplied IR Remote Commander Unit.

4 DC IN 12V connector

5 IR SELECT switch
Selects the camera number when you operate multiple cameras with the same IR Remote Commander Unit.

6 VISCA RS-232C IN connector
Connects to the RM-BR300 Remote Control Unit. When you join multiple cameras, connect it to the VISCA RS-232C OUT connector of the previous camera in the daisy chain.

7 VISCA RS-232C OUT connector
When you join multiple cameras, connect it to the VISCA RS-232C IN connector of the next camera in the daisy chain.

8 EXT SYNC IN connector

9 Card slot

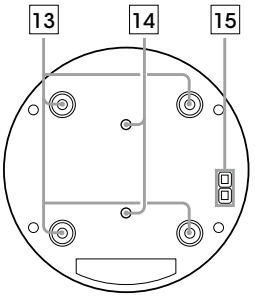
10 RGB/COMPONENT connector

Pin No.	Signal	Pin No.	Signal
1	Pr/R	9	NC
2	Y/G	10	GND
3	Pb/B	11	GND
4	GND	12	NC
5	GND	13	HD-OUT
6	GND	14	Tri-level Sync/Bi-level VD
7	GND	15	NC
8	GND		

11 DATA MIX switch
Set the switch to ON to overlap the menu with the video signal output from the installed interface board. Set it to OFF not to overlap the menu.

12 Cable cover

Bottom

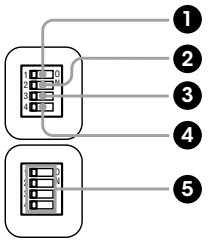


13 Ceiling bracket mounting screw holes

14 Tripod screw holes (1/4-20UNC)

15 BOTTOM switches

Setting of the BOTTOM switches



❶ Switch 1 (59.94i/50i signal format selector)
Set to ON for output of 50i signal format, or OFF for output of 59.94i signal format.

❷ Switch 2 (RS-232C/RS-422 selector)
Set to ON for RS-422, or OFF for RS-232C.

❸ Switch 3 (Communication baud rate selector)
Set to ON for 38400 bps, or OFF for 9600 bps.

❹ Switch 4 (Infrared signal output switch)
Set to ON to enable an infrared signal output, or OFF to disable the output.

❺ Camera address selectors

Set the address of the camera. Normally set to 0. With this setting, addresses are assigned to the cameras automatically in the connected order by pressing the POWER button while holding down the RESET button on the RM-BR300 Remote Control Unit. You can assign the camera address, 1 to 7, manually by setting these selectors as follows:

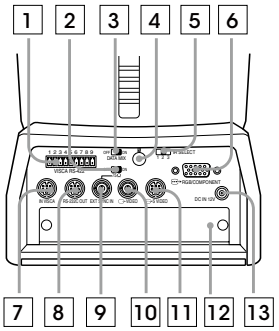
Camera address	0	1	2	3	4	5	6	7
Switch 1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 3	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Switch 4 is not used.

Note Please note that the same camera address cannot be assigned to two or more different cameras. Furthermore, you must set the switches before you turn on camera power.

5.1.3 BRC-Z700

Rear



1 VISCA RS-422 connector

2 75 Ω termination switch

This switch is used when an external sync signal is utilized. Set it to OFF when this camera is in the middle of a daisy-chain connection of multiple cameras. Set it to ON when the camera is at the end of a daisy-chain connection or when nothing is connected to the EXT SYNC IN connector on the camera.

3 DATA MIX switch

Set the switch to ON to overlap the menu with the video signal output from the installed interface board. Set it to OFF not to overlap the menu.

4 Remote sensor

This is the sensor for the supplied IR Remote Commander Unit. This remote sensor does not function when IMGFLIP is set to ON in the SYSTEM menu.

5 IR SELECT switch

Selects the camera number when you operate multiple cameras with the same IR Remote Commander Unit.

6 RGB/COMPONENT connector

Pin No.	Signal	Pin No.	Signal
1	Pr/R	9	NC
2	Y/G	10	GND
3	Pb/B	11	GND
4	GND	12	NC
5	GND	13	HD-OUT
6	GND	14	Tri-level Sync/Bi-level VD
7	GND	15	NC
8	GND		

7 VISCA RS-232C IN connector

Connects to the RM-BR300 Remote Control Unit. When you join multiple cameras, connect it to the VISCA RS-232C OUT connector of the previous camera in the daisy chain.

8 VISCA RS-232C OUT connector
When you join multiple cameras, connect it to the VISCA RS-232C IN connector of the next camera in the daisy chain.

9 EXT SYNC IN connector

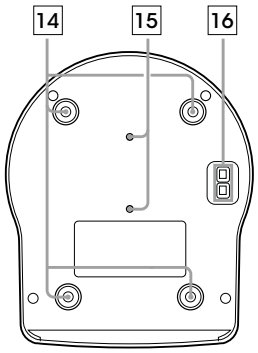
10 VIDEO connector (Composite out)

11 S-VIDEO connector

12 Card slot

13 DC IN 12V connector

Bottom

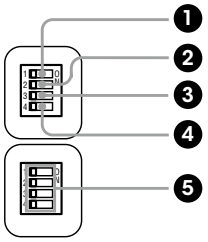


14 Ceiling bracket mounting screw holes

15 Tripod screw holes (1/4-20UNC)

16 BOTTOM switches

Setting of the BOTTOM switches



❶ Switch 1 (59.94i/50i signal format selector)
Set to ON for output of 50i signal format, or OFF for output of 59.94i signal format.

❷ Switch 2 (RS-232C/RS-422 selector)
Set to ON for RS-422, or OFF for RS-232C.

❸ Switch 3 (Communication baud rate selector)
Set to ON for 38400 bps, or OFF for 9600 bps.

❹ Switch 4 (Infrared signal output switch)
Set to ON to enable an infrared signal output, or OFF to disable the output.

❺ Camera address selectors
Set the address of the camera. Normally set to 0. With this setting, addresses are assigned to the cameras automatically in the connected order by pressing the POWER button while holding down the RESET button on the RM-BR300 Remote Control Unit. You can assign the camera address, 1 to 7, manually by setting these selectors as follows:

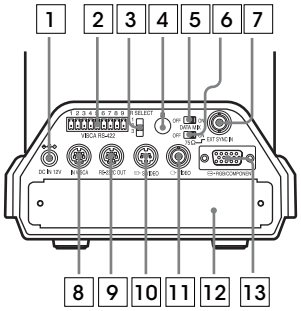
Camera address	0	1	2	3	4	5	6	7
Switch 1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 3	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Switch 4 is not used.

Note Please note that the same camera address cannot be assigned to two or more different cameras. Furthermore, you must set the switches before you turn on camera power.

5.1.4 BRC-Z330

Rear



1 DC IN 12V connector

2 VISCA RS-422 connector

3 IR SELECT switch
Select the camera number when you operate multiple cameras with the same Remote Commander Unit.

4 Remote sensor
This is the sensor for the supplied Remote Commander Unit.

5 DATA MIX switch
Set the switch to ON to overlap the menu with the video signal output from the installed interface board. Set it to OFF not to overlap the menu.

6 75 Ω termination switch
This switch is used when an external sync signal is used. Set it to OFF when this camera is in the middle of a daisy chain connection of multiple cameras. Set it to ON when the camera is at the end of a daisy chain connection or when nothing is connected to the EXT SYNC IN connector on the camera.

7 EXT SYNC IN connector

8 VISCA RS-232C IN connector
Connect to the RM-BR300 Remote Control Unit. When you connect multiple cameras, connect it to the VISCA RS-232C OUT connector of the previous camera in the daisy chain connection.

9 VISCA RS-232C OUT connector
When you connect multiple cameras, connect it to the VISCA RS-232C IN connector of the next camera in the daisy chain connection.

10 S VIDEO connector

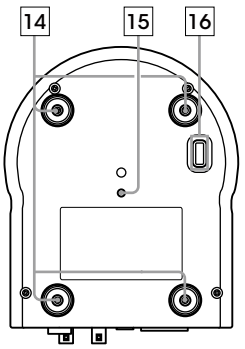
11 T VIDEO connector

12 Card slot

13 RGB/COMPONENT connector

Pin No.	Signal	Pin No.	Signal
1	Pr/R	9	NC
2	Y/G	10	GND
3	Pb/B	11	GND
4	GND	12	NC
5	GND	13	HD-OUT
6	GND	14	Tri-level Sync/Bi-level VD
7	GND	15	NC
8	GND		

Bottom

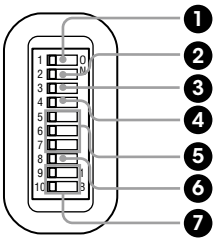


14 Ceiling bracket mounting screw holes
* The BRC-Z330 has one Tripod screw hole unlike other BRC cameras.

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

16 BOTTOM switches

Setting of the BOTTOM switches



❶ Switch 1 (59.94/50 signal format selector)
Set to ON for output in 1080/50i (720/50P) signal format, OFF for output in 1080/59.94i (720/ 59.94P) signal format.

❷ Switch 2 (1080i/720p signal format selector)
Set to ON for output in 720p signal format, OFF for output in 1080i signal format.

❸ Switch 3 (RS-232C/RS-422 selector)
Set to ON for RS-422, or OFF for RS-232C.

❹ Switch 4 (Communication baud rate selector)
Set to ON for 38400 bps, or OFF for 9600 bps.

❺ Switches 5-7 (Camera address selector)
Set the address of the camera. Normally set to "0". With this setting, addresses are assigned to the cameras automatically in the connected order by pressing the POWER button while holding down the RESET button on the RM-BR300 Remote Control Unit. You can assign the camera address "1" to "7" manually by setting these selectors as follows:

Camera address	0	1	2	3	4	5	6	7
Switch 5	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 6	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 7	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Switch 4 is not used.

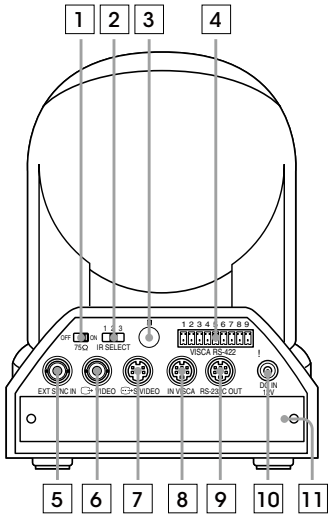
❻ Switch 8 (Infrared signal output switch)
Set to ON to enable an infrared signal output, or OFF to disable the output.

❼ Switches 9, 10
These switches are not used.

Note Please note that the same camera address cannot be assigned to two or more different cameras. Furthermore, you must set the switches before you turn on camera power.

5.1.5 BRC-300/300P

Rear



1 75 Ω termination switch
This switch is used when an external sync signal is utilized. Set it to OFF when this camera is in the middle of a daisy-chain connection of multiple cameras. Set it to ON when the camera is at the end of a daisy-chain connection.

2 IR SELECT switch
Selects the camera number when you operate multiple cameras with the same IR Remote Commander Unit.

3 Remote sensor
This is the sensor for the supplied IR Remote Commander Unit.

4 VISCA RS-422 connector

5 EXT SYNC IN connector

6 VIDEO connector (Composite out)

7 S-VIDEO connector

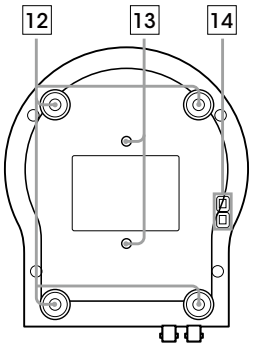
8 VISCA RS-232C IN connector
Connects to the RM-BR300 Remote Control Unit. When you join multiple cameras, connect it to the VISCA RS-232C OUT connector of the previous camera in the daisy chain.

9 VISCA RS-232C OUT connector
When you join multiple cameras, connect it to the VISCA RS-232C IN connector of the next camera in the daisy chain.

10 DC IN 12V connector

11 Card slot

Bottom

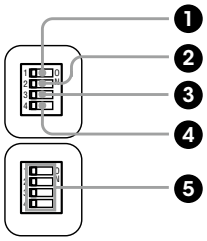


12 **Ceiling bracket mounting screw holes**

13 **Tripod screw holes (1/4-20UNC)**

14 **BOTTOM switches**

Setting of the BOTTOM switches



❶ **Switch 1 (No connection)**
Always keep it OFF.

❷ **Switch 2 (RS-232C/RS-422 selector)**
Set to ON for RS-422, or OFF for RS-232C.

❸ **Switch 3 (Communication baud rate selector)**
Set to ON for 38400 bps, or OFF for 9600 bps.

❹ **Switch 4 (Infrared signal output switch)**
Set to ON to enable an infrared signal output, or OFF to disable the output.

❺ **Camera address selectors**
Set the address of the camera. Normally set to 0. With this setting, addresses are assigned to the cameras automatically in the connected order by pressing the POWER button while holding down the RESET button on the RM-BR300 Remote Control Unit. You can assign the camera address, 1 to 7, manually by setting these selectors as follows:

Camera address	0	1	2	3	4	5	6	7
Switch 1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 3	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Switch 4 is not used.

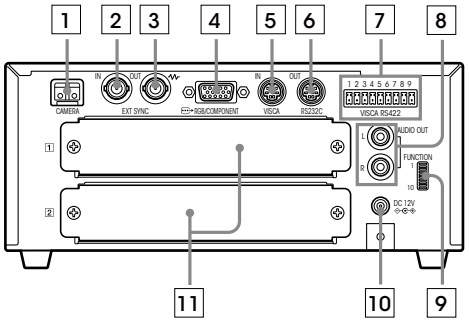
Note Please note that the same camera address cannot be assigned to two or more different cameras. Furthermore, you must set the switches before you turn on camera power.

5.2 Optical Multiplex Units

The following provides information on the location and function of BRU-SF10, BRU-H700 and BRU-300/300P parts.
With these optical multiplex units, you can transmit uncompressed digital data including video, external sync, and camera control signals.

5.2.1 BRU-SF10 HD Optical Multiplex Unit for use with the BRC-H900 and BRC-Z330

Rear



1 **CAMERA connector**

2 **EXT SYNC IN connector**

3 **EXT SYNC OUT connector**

4 **RGB/COMPONENT connector**

Pin No.	Signal	Pin No.	Signal
1	Pr/R	9	NC
2	Y/G	10	GND
3	Pb/B	11	GND
4	GND	12	NC
5	GND	13	HD-OUT
6	GND	14	Tri-level Sync/Bi-level VD
7	GND	15	NC
8	GND		

5 VISCA RS-232C IN connector

Connect to the RM-BR300 Remote Control Unit (not supplied). When you connect multiple cameras, connect it to the VISCA RS-232C OUT connector of the previous camera in a daisy-chain connection.

6 VISCA RS-232C OUT connector

When you connect multiple cameras, connect it to the VISCA RS-232C IN connector of the next camera in a daisy-chain connection.

7 VISCA RS-422 connector

8 AUDIO OUT L/R jacks

Loop through output of the audio line signal input from the AUDIO IN jacks on the BRBK-SF1 HD Optical Multiplex Card inserted into the camera via the Optical Fiber Cable.

9 VISCA FUNCTION switches

These switches are used for the VISCA communication settings.

Switch 1 (RS-232C/RS-422 selector)

Set to ON for RS-422, or OFF for RS-232C.

Switch 2 (Communication baud rate selector)

Set to ON for 38,400 bps, or OFF for 9,600 bps.

Switches 3 to 5 (Camera address selectors)

Set the address of the camera.
Normally set to "0". With this setting, addresses are assigned to the cameras automatically in the connected order by pressing the POWER button while holding down the RESET button on the RM-BR300 Remote Control Unit (not supplied).
You can assign the camera address "1" to "7' manually by setting these selectors as follows:

Camera address	0	1	2	3	4	5	6	7
Switch 3	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 4	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 5	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Note Please note that the same camera address cannot be assigned to two or more different cameras.

Switch 6 (59.94/50 signal format selector)

Set to ON for output of 50 signal format, or OFF for output of 59.94 signal format.

Switches 7 to 10

Not used. Set them to OFF.

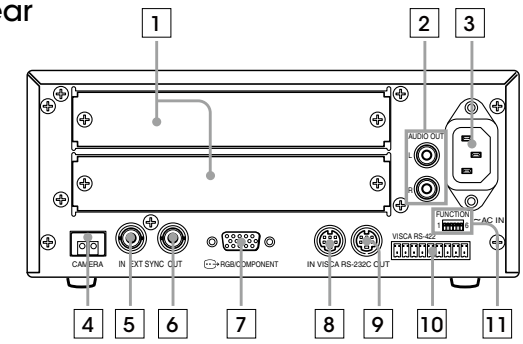
Note Please further note that you must set the switches before you turn on power to the multiplex unit.

10 DC 12 V connector

11 Card slot

5.2.2 BRU-H700 HD Optical Multiplex Unit for use with the BRC-H700 and BRC-Z700

Rear



1 Card slot

2 AUDIO OUT L/R jacks

Loop through output of the audio line signal input from the AUDIO IN jacks on the BRBK-H700 HD Optical Multiplex Card or BRBK-MF1 HD Optical Multiplex Card inserted into the camera via an optical fiber cable.

3 ~AC IN connector

4 CAMERA connector

5 EXT SYNC IN connector

6 EXT SYNC OUT connector

7 RGB/COMPONENT connector

Pin No.	Signal	Pin No.	Signal
1	Pr/R	9	NC
2	Y/G	10	GND
3	Pb/B	11	GND
4	GND	12	NC
5	GND	13	HD-OUT
6	GND	14	Tri-level Sync/Bi-level VD
7	GND	15	NC
8	GND		

8 VISCA RS-232C IN connector

Connect to the RM-BR300 Remote Control Unit. When you join multiple cameras, connect it to the VISCA RS-232C OUT connector of the previous camera in the daisy chain.

9 VISCA RS-232C OUT connector

When you join multiple cameras, connect it to the VISCA RS-232C IN connector of the next camera in the daisy chain.

10 VISCA RS-422 connector

11 VISCA FUNCTION switches

Switch 1 (RS-232C/RS-422 selector)
Set to ON for RS-422, or OFF for RS-232C.

Switch 2 (Communication baud rate selector)
Set to ON for 38400 bps, or OFF for 9600 bps.

Switches 3 to 5 (Camera address selectors)
Set the address of the camera. Normally set to 0. With this setting, addresses are assigned to the cameras automatically in the connected order by pressing the POWER button while holding down the RESET button on the RM-BR300 Remote Control Unit. You can assign the camera address, 1 to 7, manually by setting these selectors as follows:

Camera address	0	1	2	3	4	5	6	7
Switch 3	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 4	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 5	OFF	OFF	OFF	OFF	ON	ON	ON	ON

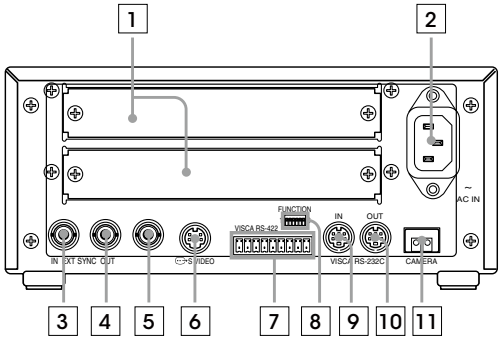
Note Please note that the same camera address cannot be assigned to two or more different cameras.

Switch 6 (59.94i/50i signal format selector)
Set to ON for output of 50i signal format, or OFF for output of 59.94i signal format.

Note Please further note that you must set the switches before you turn on power to the multiplex unit.

5.2.3 BRU-300/300P SD Optical Multiplex Unit for use with the BRC-300/300P

Rear



1 Card slot

2 AC IN connector

3 EXT SYNC IN connector

4 EXT SYNC OUT connector

5 Composite video output connector

6 S-VIDEO connector

7 VISCA RS-422 connector

8 VISCA FUNCTION switches

Switch 1 (RS-232C/RS-422 selector)
Set to ON for RS-422, or OFF for RS-232C.

Switch 2 (Communication baud rate selector)
Set to ON for 38400 bps, or OFF for 9600 bps.

Switches 3 to 5 (Camera address selectors)
Set the address of the camera. Normally set to 0. With this setting, addresses are assigned to the cameras automatically in the connected order by pressing the POWER button while holding down the RESET button on the RM-BR300 Remote Control Unit. You can assign the camera address, 1 to 7, manually by setting these selectors as follows:

Camera address	0	1	2	3	4	5	6	7
Switch 3	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 4	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 5	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Switch 6 is not used.

Note Please note that the same camera address cannot be assigned to two or more different cameras.

9 VISCA RS-232C IN connector
Connect to the RM-BR300 Remote Control Unit. When you join multiple cameras, connect it to the VISCA RS-232C OUT connector of the previous camera in the daisy chain.

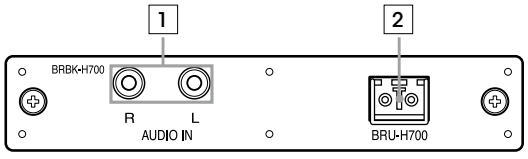
10 VISCA RS-232C OUT connector
When you join multiple cameras, connect it to the VISCA RS-232C IN connector of the next camera in the daisy chain.

11 CAMERA connector

5.3 Optical Multiplex Cards and Optional Video Cards

The following provides information on the location and function of optical multiplex card parts and optional video cards and optional video cards. The BRC Series allows you to choose from a wide range of optional video cards. This versatility enables you to create flexible analog and digital system configurations.

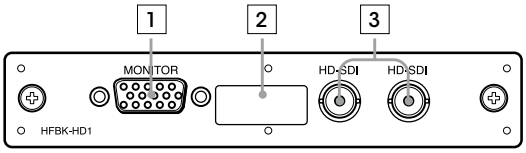
5.3.1 BRBK-H700 HD Optical Multiplex Card



1 AUDIO IN L/R jacks (phono-type)
Input an audio signal (stereo) that is output from the AUDIO OUT jacks on the BRU-H700 HD Optical Multiplex Unit via an optical fiber cable. The audio input on this board accepts audio line signals only. When you input audio signals from a microphone or similar device, it should be connected with a microphone amplifier so that audio signals with an appropriate audio level can be input.

2 Optical connector

5.3.2 HFBK-HD1 HD Interface Board



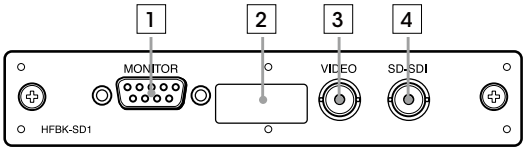
1 MONITOR connector (D-sub 15-pin)

Pin No.	Signal	Pin No.	Signal
1	R/Pr (X)	9	NC
2	G/ Y (X)	10	GND
3	B/Pb (X)	11	NC
4	NC	12	NC
5	GND	13	HD
6	R/Pr (G)	14	VD/SYNC
7	G/Y (G)	15	NC
8	B/Pb (G)		

2 DIP switches (inside the cap)
When this interface board is inserted into the camera or the BRU-H700 HD Optical Multiplex Unit, the DIP switches cannot be used.
The parameters can be set from the menu of the camera.

3 HD-SDI connector (BNC-type)
Supplies HD-SDI signals that conform to the SMPTE292M serial digital interface standard. The two connectors output the same signal.

5.3.3 HFBK-SD1 SD Interface Board



1 MONITOR connector (D-sub 9-pin)

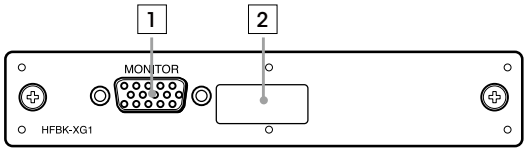
Pin No.	Signal	Pin No.	Signal
1	GND	6	Composite/Y
2	GND	7	SYNC
3	R/Cr	8	GND
4	G/ Y	9	–/C
5	B/Cb		

2 DIP switches (inside the cap)
When this interface board is inserted into the camera or the BRU-H700 HD Optical Multiplex Unit, the DIP switches cannot be used.
The parameters can be set from the menu of the camera.

3 VIDEO connector (BNC-type)
Supplies analog composite signals. The aspect ratio can be selected in the camera's DOWN CONVERTER menu.

4 SD-SDI connector (BNC-type)
Supplies down-converted SD-SDI signals that conform to SMPTE259M (for 59.94i signal format) and ITU-R BT.656 (for 50i signal format) serial digital interface standards. The aspect ratio can be selected with the camera's DOWN CONVERTER menu.

5.3.4 HFBK-XG1 XGA Interface Board



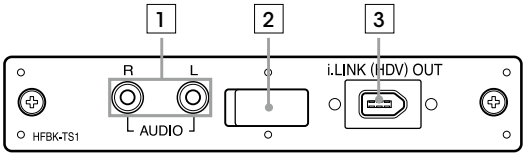
1 MONITOR connector (D-sub 15-pin)

Pin No.	Signal	Pin No.	Signal
1	R (X)	9	NC
2	G (X)	10	GND
3	B (X)	11	NC
4	NC	12	NC
5	GND	13	HD
6	R (G)	14	VD
7	G (G)	15	NC
8	B (G)		

2 DIP switches (inside the cap)

When this interface board is inserted into the camera or the BRU-H700 HD Optical Multiplex Unit, the DIP switches cannot be used.
The parameters can be set from the menu of the camera.

5.3.5 HFBK-TS1 HDV Interface Board

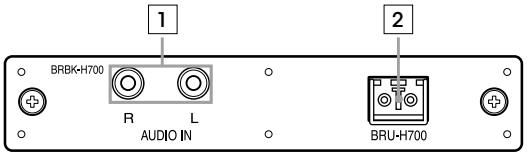


1 AUDIO L/R jacks (phono-type)
Input audio signals (stereo). The input audio signals are converted into signals that comply with HDV standards. The time difference between image and audio can be adjusted by up to 240 minutes in 10 increments.

2 DIP switches (inside the cap)
When this interface board is inserted into the camera or the BRU-H700 HD Optical Multiplex Unit, the DIP switches cannot be used.
The parameters can be set from the menu of the camera.

3 i.LINK (HDV) OUT connector (i.LINK 6-pin)

5.3.6 BRBK-MF1 HD Optical Multiplex Card

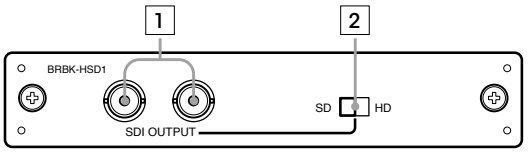


1 AUDIO IN L/R jacks (phono-type)
Input an audio signal (stereo), which is output from the AUDIO OUT jacks on the BRU-H700 HD Optical Multiplex Unit via an optical fiber cable. The time difference between video and audio can be adjusted by up to 240 ms by 10 ncrements.

Note The audio input on this board accepts audio line signals only. When you input audio signals from a microphone or similar device, it should be connected with a microphone amplifier so that audio signals with an appropriate audio level can be input.

2 Optical connector

5.3.7 BRBK-HSD1 HD/SD-SDI Output Card

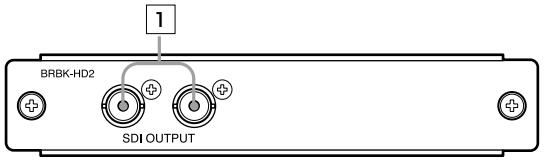


1 SDI OUTPUT connectors (BNC-type)
Supplies down-converted SD-SDI signals that conform to SMPTE259M (for 59.94i signal format) and ITU-R BT.656 (50i signal format) serial digital interface standards, and HD-SDI signals that conform to the SMPTE292M serial digital interface standard. Select HD-SDI or SD-SDI signals with the HD/SD select switch.

2 HD/SD select switch
Set the switch to SD to supply SD-SDI signals and HD to supply HD-SDI signals.

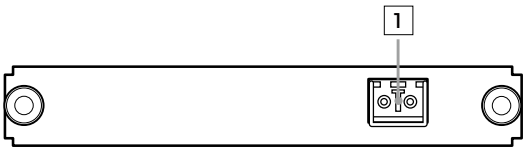
Note
- SD-SDI and HD-SDI signals cannot be supplied simultaneously.
- Set the SD/HD select switch before turning on the camera.

5.3.8 BRBK-HD2 HD-SDI Output Card



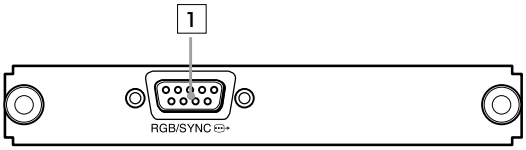
1 SDI OUTPUT connectors (BNC-type)
The Card allows output of an HD-SDI signal conforming to SMPTE292M serial digital interface standards. No audio signal is output from the card.

5.3.9 BRBK-303 Optical Multiplex Card



1 Optical connector

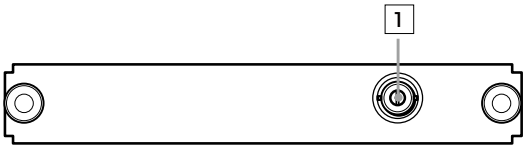
5.3.10 BRBK-301 Analog RGB Component Card



1 RGB/SYNC connector

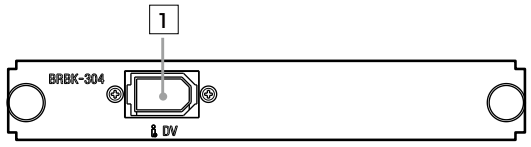
Pin No.	Signal	Pin No.	Signal
1	GND	6	Composite/Y
2	GND	7	SYNC
3	R/Cr	8	GND
4	G/ Y	9	–/C
5	B/Cb		

5.3.11 BRBK-302 SDI Card



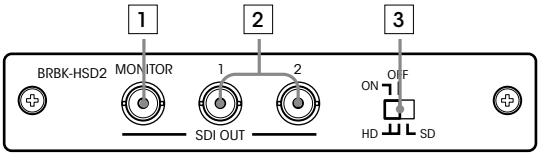
1 SDI connector
Supplies a signal conforming to the SMPTE259M serial digital interface standard.

5.3.12 BRBK-304 DV Card



1 i.LINK (DV) OUT connector (i.LINK 6-pin)

5.3.13 BRBK-HSD2 HD/SD-SDI Output Card



1 SDI MONITOR OUT connector (BNC type)
Outputs down-converted SD-SDI signals that conform to SMPTE 259M serial digital interface standards, and down-converted HD-SDI signals that conform to SMPTE 292 serial digital interface standards.

2 SDI connectors 1, 2 (BNC type)
Outputs down-converted SD-SDI signals that conform to SMPTE 259M serial digital interface standards, and down-converted HD-SDI signals that conform to SMPTE 292 serial digital interface standards.

3 Panel switch
Switch between SD-SDI signals and HD-SDI signals.

Note
- SD-SDI and HD-SDI signals cannot be supplied simultaneously.
- Set the panel switch before turning on the camera.

Images when menu display is ON

When a BRBK-HSD2 is installed in the BRC-H900 card slot

BRBK-HSD2 panel switch	MONITOR connector	SDI connectors 1, 2
Left position HD/ DATA MIX: ON (HD-SDI output)	○	
Middle position HD/DATA MIX: OFF (HD-SDI output)	○	×
Right position SD (SD-SDI output)	○	

○: Menu is superimposed on image
×: Menu is not superimposed on image

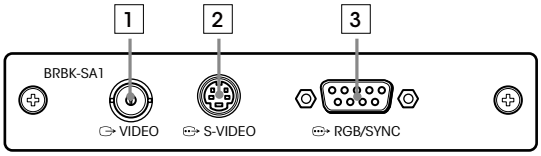
When a BRBK-HSD2 is installed in the BRU-SF10 card slot

BRBK-HSD2 panel switch	MONITOR connector	SDI connectors 1, 2
Left position HD/ DATA MIX: ON (HD-SDI output)	○	
Middle position HD/DATA MIX: OFF (HD-SDI output)	○	×
Right position SD (SD-SDI output)	○/×[1)]	

○: Menu is superimposed on image
×: Menu is not superimposed on image

1) When the DATA MIX switch on the front panel of the BRU-SF10 HD Optical Multiplex Unit is set to ON, the menu display is overlapped on all images output from the card. When the DATA MIX switch is set to OFF, the menu is not displayed.

5.3.14 BRBK-SA1 Analog SD Output Card



1 VIDEO connector (BNC type)
Supplies analog composite signals. The aspect ratio can be configured in the SD menu of the camera.

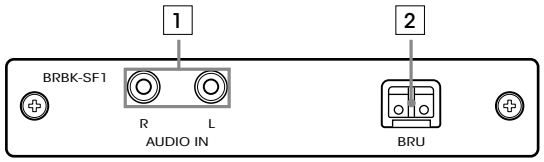
2 S VIDEO connector (4-pin mini-DIN)
Outputs S-Video signals. You can configure the aspect ratio with the SD menu of the camera.

3 RGB/SYNC connector (D-sub 9-pin)

Pin No.	Signal	Pin No.	Signal
1	GND	6	Composite/Y
2	GND	7	SYNC
3	R/Cr	8	GND
4	G/ Y	9	–/C
5	B/Cb		

Note
- When a BRBK-SA1 Analog SD Output Card is installed in the BRC-H900 HD Color Video Camera and menu display for the camera is turned ON, the menu display is overlapped with the image.
- When a BRBK-SA1 Analog SD Output Card is installed in a BRU-SF10 HD Optical Multiplex Unit on which the front panel DATA MIX switch is set to ON and menu display for the camera is turned ON, the menu display is overlapped with the image. When the DATA MIX switch is set to OFF, the menu will not be displayed on the image, even if menu display for the camera is turned ON.

5.3.15 BRBK-SF1 HD Optical Multiplex Card



1 AUDIO IN L/R jacks (phono type)
Input an audio signal (stereo), which is output from the AUDIO OUT jacks on the BRU-SF10 HD Optical Multiplex Unit via the Optical Fiber Cable.

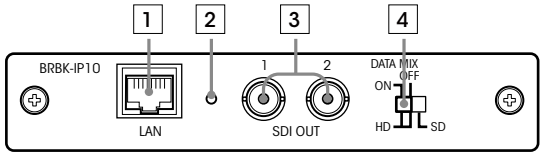
Note The audio input on this card accepts audio line signals only. When you input audio signals from a microphone, etc., it should be connected with a microphone amplifier so that audio signals with an appropriate audio level can be input.

2 Optical connector

5.4 IP Control Cards

The following provides information on the location and function of IP control card parts.

5.4.1 BRBK-IP10 for use with the BRC-H900 and BRC-Z330



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

Note When the IP control card BRBK-IP10 is inserted into the camera, the RS-232C and RS-422 connectors cannot be used.

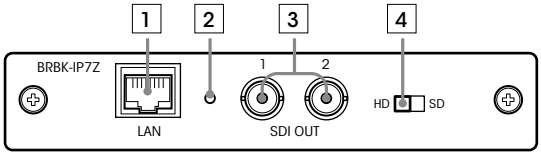
2 Reset switch
If you press down this switch with a pointed tip for about five seconds, the camera will reboot and the IP control card BRBK-IP10 will return to the factory setting.
Factory settings for BRBK-IP10
- IP address: 192.168.0.100
- Subnet mask: 255.255.255.0
- Name: CAM1

3 SDI 1, 2 connector (BNC type)
Outputs down-converted SD-SDI signals that conform to SMPTE 259M serial digital interface standards, or HD-SDI signals that conform to SMPTE 292 serial digital interface standards.
When the menu display for the camera is turned ON, you can use the 4 HD/SD select switch to output the menu display signal that overlaps the images, from this connector.

4 HD/SD select switch
Switches between SD-SDI signals and HD-SDI signals.
When outputting HD-SDI signals, you can select whether to overlap the menu display with the image output from SDI connectors 1 and 2.
- "HD/DATA MIX: ON" Outputs HD-SDI signal and the menu display is overlapped.
- "HD/DATA MIX: OFF" Outputs HD-SDI signal and the menu display is not overlapped.
- "SD": Outputs SD-SDI signal and the menu display is overlapped.

Note
- SD-SDI and HD-SDI signals cannot be supplied simultaneously.
- Set the HD/SD select switch before turning on the camera.
- Do not push the switch forcibly with a screwdriver, etc.

5.4.2 BRBK-IP7Z for use with the BRC-Z700



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

Note When the IP control card BRBK-IP7Z is inserted into the camera, the RS-232C and RS-422 connectors cannot be used.

2 Reset switch

If you press down this switch with a pointed tip for about five seconds, the camera will reboot and the IP control card BRBK-IP7Z will return to the factory setting.

Factory settings for BRBK-IP7Z

- IP address: 192.168.0.100
- Subnet mask: 255.255.255.0
- Name: CAM1

3 SDI 1, 2 connectors (BNC type)

Supplies down-converted SD-SDI signals that conform to the SMPTE259M serial digital interface standards, or HD-SDI signals that conform to the SMPTE292 serial digital interface standards. Select HD-SDI or SD-SDI signals with the 4 HD/SD select switch.

4 HD/SD select switch

The SD setting supplies SD-SDI signals and the HD setting supplies HD-SDI signals.

Note

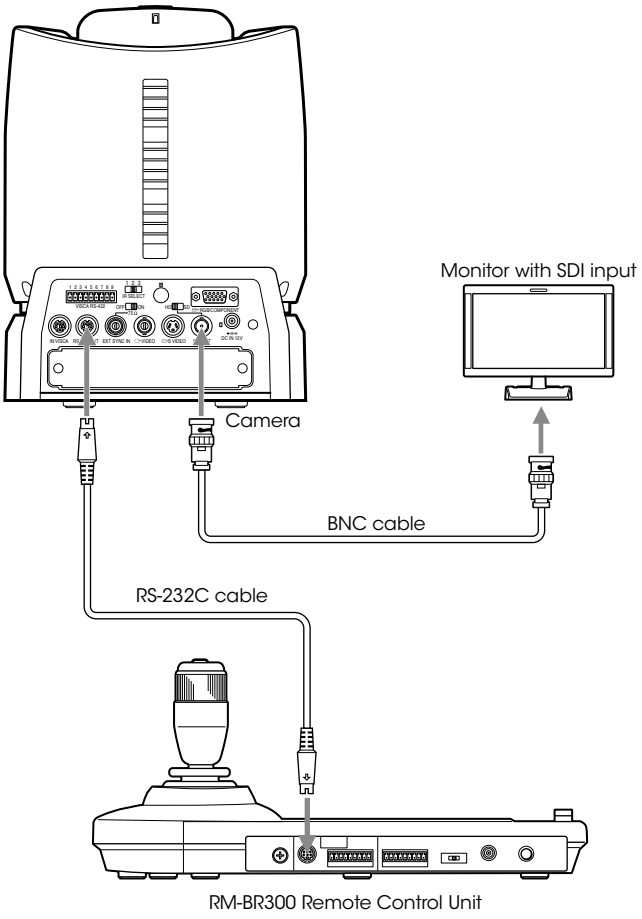
- SD-SDI and HD-SDI signals cannot be supplied simultaneously.
- Set the SD/HD select switch before turning on the camera.
- Do not push the switch forcibly with a screwdriver, etc.

6 Basic Set-up and Operation

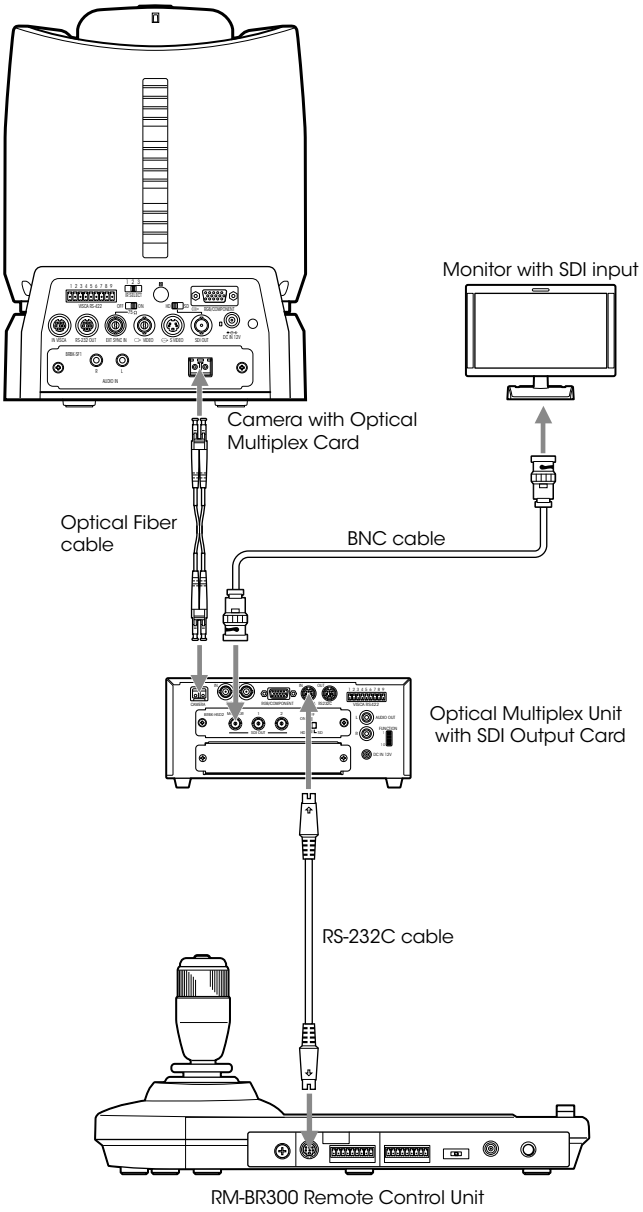
6.1 Connections

These are the basic connections of the cameras and monitor prior to a demonstration.

Connecting a monitor



Connecting the optical multiplex unit



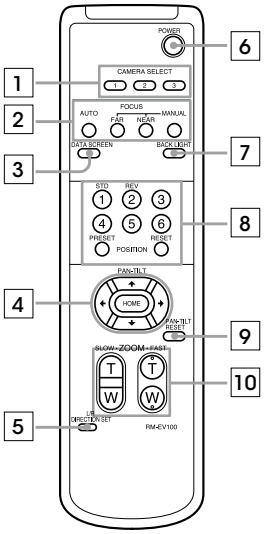
6.2 Monitor Set-up

The BRC-H900, the BRC-H700, the BRC-Z700, and the BRC-Z330 come equipped with a Color Bar Output mode, allowing you to precisely adjust the monitor. For the BRC-300/300P, it is suggested that you use the Auto Set-up function of the monitor.

7 Remote Operation

7.1 IR Remote Commander Unit

The following provides information on the function and location of the parts.



1 CAMERA SELECT buttons

Press the button corresponding to the camera you want to operate with the IR Remote Commander Unit. 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 IR Remote Commander Unit. If you are installing cameras close to each other, make sure you allocate a different camera number to each one.

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 and zoom 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 V or v to select the menu items and B or b to change the set values.

5 L/R DIRECTION SET button

Hold down this button and press the REV button to change camera movement to the opposite direction indicated by the arrow of the B/b buttons. To reset the camera movement direction, 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 function. Press it again to disable Backlight Compensation.

8 POSITION buttons

Hold down the PRESET button and press a number button from 1 to 6 to store the current Camera Direction, Zoom, Focus Adjustment, and Backlight Compensation setting in the memory of the pressed number button. To erase this memory, hold down the RESET button and press the same number button. For the BRC-H900, BRC-H700, BRC-Z700 and BRC-Z330, preset positions from 7 to 16 are not available.

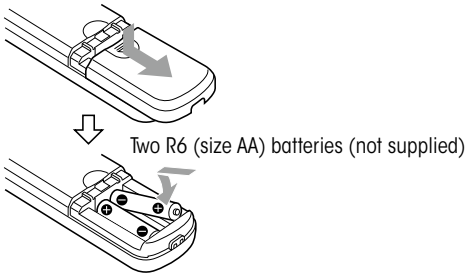
9 PAN/TILT RESET button

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.

Installing batteries



Caution To avoid risk of explosion, use R6 (size AA) manganese or alkaline batteries.

7.2 RM-BR300 Remote Control Unit

7.2.1 Features

Effective control of up to seven cameras

The RM-BR300 Remote Control Unit achieves remote operation of up to seven cameras in a daisy-chain configuration, allowing only one operator to manage multiple camera systems.

Various Camera Presets

Various camera settings can be adjusted within the menu. The BRC-H900/BRC-H700/BRC-Z700/BRC-Z330 have sixteen presets each and the BRC-300/300P has six presets to which pre-defined P/T/Z positions and other various camera settings can be allocated.

RS-232C/RS-422 Interface

RS-422 cables as well as a supplied RS-232C cable are available to connect the camera to an optical multiplex unit for long-distance operation.

TALLY/CONTACT selector

If you select TALLY on the TALLY/CONTACT selector, you can control the camera selected by the switcher. If you select CONTACT on the TALLY/CONTACT selector, you can operate the camera selected by the RM-BR300 Remote Control Unit. By selecting CONTACT (TALLY) on the TALLY/CONTACT selector, you can control the camera selected by the switcher and also light the camera tally.

In addition to the features mentioned in 7.2.1, the following features are now available.

Improved functionality with the RM-BR300/4

Model Name	Destination	Serial No.
RM-BR300/4 Remote Control Unit	UC7	110001-
RM-BR300/4 Remote Control Unit	J1	310001-
RM-BR300/4 Remote Control Unit	CE3	410001-

The following features can be achieved with the RM-BR300/4 and after.

Improvement of joystick operation (BRC-H900/BRC-H700/BRC-Z700/BRC-Z330/BRC-300/300P)

The pan/tilt speed can be adjusted in seven levels by inclining the joystick to its maximum angle, and pan/tilt operation can be controlled easily at low speed. Only the maximum pan/tilt speed can be set with the previous version.
To select a speed level, hold down the SHIFT button and PAN/TILT RESET button at the same time for a few seconds, and the CAMERA switch lamp on the RM-BR300 starts to flash. Select between 1 and 7: 1 for the lowest speed and 7 is for the highest speed.

Addition of Bright Volume Control mode (BRC-H900/BRC-H700/BRC-Z700/BRC-Z330)

Iris can be controlled independently in Bright Volume Control mode, selected with a DIP Switch(3) on the bottom of the RM-BR300/4. Iris and Gain can be adjusted in combination with the previous version of the RM-BR300.

Improved Pan/Tilt joystick operation (BRC-H900/BRC-Z700/BRC-Z330)

- Shortens the time lag of the Pan/Tilt joystick.
- Enables fine direction control by the Pan/Tilt joystick.

Improved AF operation (BRC-H900/BRC-Z700/BRC-Z330)

While one object is in focus, you can get the next object (Far/Near) into focus by adjusting the Focus Volume (Far/Near), when AF and AF Assist are set to ON.

Improved Color Shift operation (BRC-H900/BRC-Z700/BRC-Z330)

R and B can be adjusted separately with R/B Gain Volume when in AWB mode.

Improved Focus Volume operation (BRC-H900/BRC-Z700/BRC-Z330)

You can adjust to focus another subject in a forward or backward location with the FOCUS control when AF MODE is AUTO and AF ASSIST is on.

Improved functionality with the RM-BR300/5

Model Name	Destination	Serial No.
RM-BR300/5 Remote Control Unit	UC7	120001-
RM-BR300/5 Remote Control Unit	J1	320001-
RM-BR300/5 Remote Control Unit	CE3	420001-

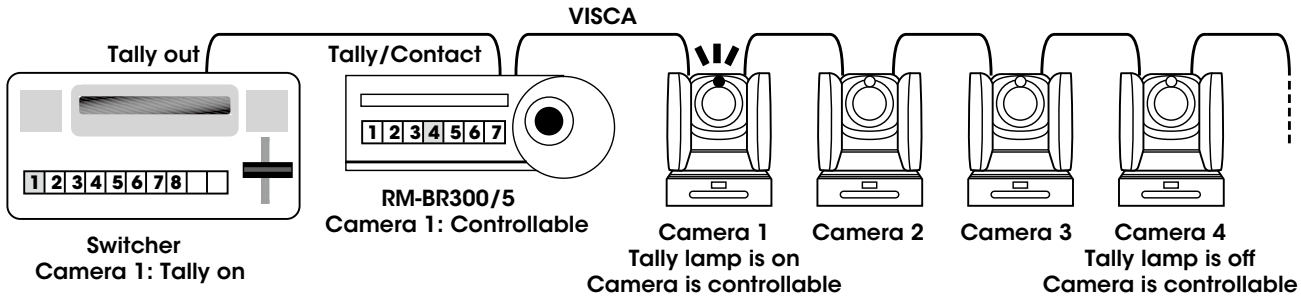
The following feature can be achieved with the RM-BR300/5 and after.

ON-Air Tally Mode

On-Air Tally Mode is newly incorporated to the RM-BR300/5. You can set the On-Air Tally Mode by taking the following steps:

1. Press the On/Off switch to turn off the RM-BR300/5
2. Set the Tally/Contact switch to Tally
3. Press the On/Off switch to turn on the unit, while simultaneously holding down the Mode button, Camera button 4, and Position button 4

When On-Air Tally Mode is selected, the tally lamp of the camera lights up depending on the selected port of the Tally/Contact connector on the RM-BR300/5, regardless of the camera selection on the RM-BR300/5. For example, if you press camera 1 on the switcher, camera 4 on the RM-BR300/5 remains unchanged. This is because the switcher and the RM-BR300/5 operate independently in this mode.
The tally lamp of camera 1 will light up, and camera 4 will remain controllable.

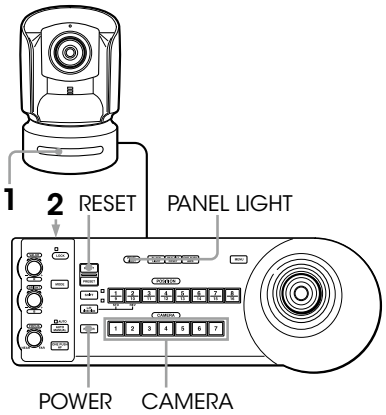


7.2.2 Operation

The following information enables easy camera system operation with the benefit of functions such as pan/tilt/zoom operation, preset memory, and more.

Note Before operating, check that the camera, the RM-BR300 Remote Control Unit, and peripheral devices are properly installed and connected.

Turning on the power



1 Connect the camera to an AC outlet using the supplied AC power adaptor and power cord. When the power is turned on, the POWER lamp lights. The camera will automatically pan and tilt, and be reset to the position stored in POSITION 1 (Pan/Tilt Reset action).

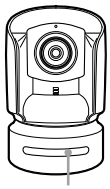
2 Press the ON/OFF switch on the RM-BR300 Remote Control Unit to turn it on.

3 Turn on the peripheral devices.

Note Be sure to turn on the power of the camera before the power of the RM-BR300 Remote Control Unit. Otherwise, the RM-BR300 cannot recognize the connected camera.

To turn on/off the camera using the RM-BR300 Remote Control Unit

While holding down the POWER button, press the CAMERA button corresponding to the required camera. When you turn the power off using the RM-BR300 Remote Control Unit, the POWER lamp turns off and the STANDBY lamp lights on the camera.



STANDBY lights.

To illuminate the panel of the RM-BR300 Remote Control Unit

Press the PANEL LIGHT button.

Operating multiple cameras

To assign camera addresses automatically:

1. Make sure that the camera address selector on the bottom of each camera is set to 0.
2. Turn on the power of all the connected cameras and the RM-BR300 Remote Control Unit.
3. Hold down the RESET button and press the POWER button on the RM-BR300. The RM-BR300 recognizes the connected cameras and assigns them camera addresses, 1 to 7, automatically in the connected order.
4. To confirm, press the POWER button on the RM-BR300 and check that the CAMERA buttons light.

To assign camera addresses manually

Set one of the camera addresses, 1 to 7, using the camera address selectors on the bottom of each camera.

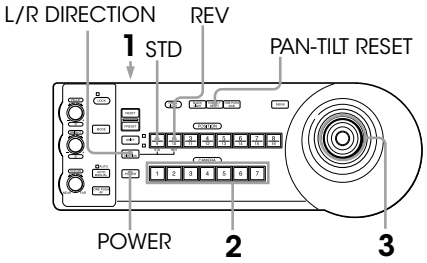
Camera address selectors

Set the address of the camera. This is normally set to 0. With this setting, addresses are assigned to the cameras automatically in the connected order by pressing the POWER button while holding down the RESET button on the RM-BR300 Remote Control Unit. You can assign the camera address, 1 to 7, manually by setting these selectors as follows:

Camera address	0	1	2	3	4	5	6	7
Switch 1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Switch 2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Switch 3	OFF	OFF	OFF	OFF	ON	ON	ON	ON

Switch 4 is not used.

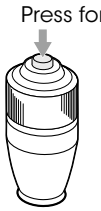
Pan/tilt/zoom operation



1. Press the CAMERA button corresponding to the camera you want to operate.
2. Operate the joystick to pan or tilt the camera. While checking the picture on the screen, incline the joystick in the desired direction. The panning/tilting speed changes according to the angle at which you incline the joystick. Release the joystick to stop panning/tilting.

To return the camera to facing forwards

Press the button on top of the joystick for one or two seconds.

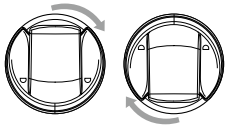
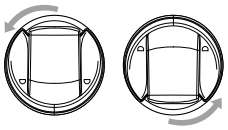


If you accidentally move the camera with your hand

Press the PAN/TILT RESET button to perform the Pan/Tilt Reset action.

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

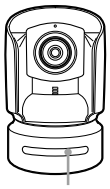
The camera is preset to face towards the right whenever the joystick is inclined to the right. You might wish to face the camera towards a direction that is opposite to the direction you inclined the joystick. For example, you may want to change the direction of the camera while checking the picture on the screen. In this case, press the POSITION 2 (REV) button while holding down the L/R DIRECTION button. To reset the setting, press the POSITION 1 (STD) button while holding down the L/R DIRECTION button.

Joystick	Movement of the camera	Setting
Incline to the right. 		While holding down   Press.
Incline to the right. 		While holding down   Press.

Note The setting above only changes the signal emitted from the RM-BR300 Remote Control Unit, and does not change any camera settings.

If the STANDBY lamp of the camera flashes

When the camera is moved or turned by hand or by external shock, the microcomputer inside the camera my not be able to memorize the pan/tilt position properly. To reset the pan/tilt position, press the PAN/TILT RESET button.

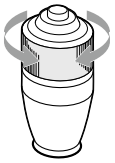


STANDBY flashes.

Zooming

Turn the dial on the upper part of the joystick.

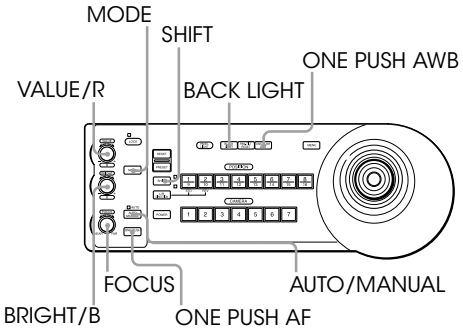
Subject appears farther away. (Wide angle)



Subject appears closer. (Telephoto)

Note When you perform a pan/tilt operation with a camera in Telephoto mode, the screen image may move at an uneven speed.

Adjusting the camera



Focusing on a subject

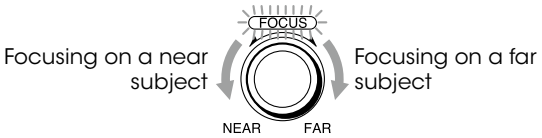
To focus the camera on a subjec automatically

Press the AUTO/MANUAL button so that the AUTO Indicator lights.

Note The camera focuses on the subject in the center of the screen automatically.

To focus the camera on a subject manually

Press the AUTO/MANUAL button so that the MANUAL Indicator lights. Then turn the FOCUS control clockwise or counterclockwise to make the camera focus on the subject.



One-push auto focusing during manual focus adjustment

Press the ONE PUSH AF button. The camera focuses on the subject in the center of the screen automatically.

Backlight Compensation function

When you shoot a subject with a light source behind it, press the BACK LIGHT button. To cancel this function, press the BACK LIGHT button again.

Note The Backlight Compensation function is not effective if the mode is set to MANUAL in the camera's EXPOSURE menu.

Spotlight Compensation function

Hold down the SHIFT button and press the BACK LIGHT button. To cancel this function, hold down the SHIFT button and press the BACK LIGHT button again.

Note The Backlight and Spotlight Compensation functions cannot be used simultaneously.

Adjusting the white balance

Note Before adjusting the white balance, shoot a white object under the same lighting conditions as the subject you want to shoot, and zoom it in on the screen. (You can use a white wall, etc., instead of the object.)

To adjust the white balance automatically

1 Set White Balance to ONE PUSH in the camera's COLOR menu.

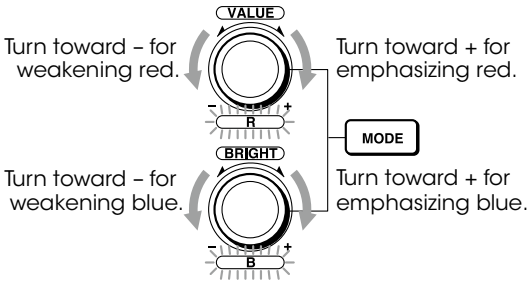
2 Press the ONE PUSH AWB button. The white balance is adjusted automatically.

To adjust the white balance manually

1 Set White Balance to MANUAL in the camera's COLOR menu.

2 Press the MODE button so that the R and B indicators on the VALUE/R and BRIGHT/B controls light (White Balance Adjustment mode).

3 Adjust the red gain with the R control and the blue gain with the B control.



Functions of the R and B controls

When White Balance Adjustment mode is selected with the MODE button on the RM-BR300 Remote Control Unit, the functions of the R control and B control change according to the White Balance setting in the camera's COLOR menu.

BRC-H900

WHITE BALANCE setting	R control	B control
MANUAL	Red gain control	Blue gain control
AUTO 1/2, ONE PUSH	WB R. SHIFT control	WB B. SHIFT control

BRC-H700

WHITE BALANCE setting	R control	B control
MANUAL	Red gain control	Blue gain control
AUTO, ONE PUSH	WB SHIFT control	WB SHIFT control

BRC-Z700

WHITE BALANCE setting	R control	B control
MANUAL	Red gain control	Blue gain control
AUTO 1/2, ONE PUSH	WB R. SHIFT control	WB B. SHIFT control

BRC-Z330

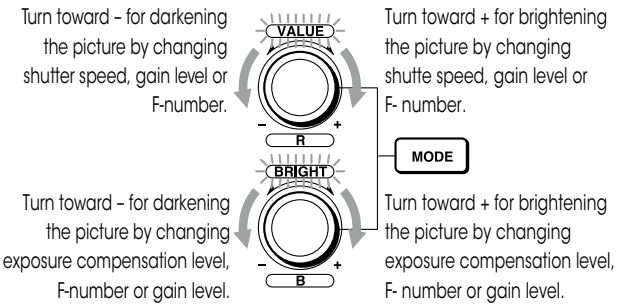
WHITE BALANCE setting	R control	B control
MANUAL	Red gain control	Blue gain control
AUTO 1/2, ONE PUSH	WB R. SHIFT control	WB B. SHIFT control

Adjusting the brightness

1 Set the mode to SHUTTER Pri, IRIS Pri, GAIN Pri, or MANUAL in the camera's EXPOSURE menu.

2 Press the MODE button so that the VALUE and BRIGHT indicators on the VALUE/R and BRIGHT/B controls light (Brightness Adjustment mode).

3 Adjust the brightness with the VALUE/R or BRIGHT/B control.



Functions of the VALUE and BRIGHT controls

The functions of the VALUE control and the BRIGHT control change according to the mode setting in the EXPOSURE menu, as follows:

BRC-H900

MODE setting	Function of VALUE control	Function of BRIGHT control
FULL AUTO	Not used	Exposure compensation level control*
SHUTTER Priority	Shutter speed control	Exposure compensation level control*
IRIS Priority	F-number control	Exposure compensation level control*
GAIN Priority	Gain control	Exposure compensation level control*
MANUAL	Shutter speed control	•F-number and gain controls (when the DIP switch 3 at the bottom of the Remote Control Unit is set to ON) •F-number control (when the DIP switch 3 at the bottom of the Remote Control Unit is set to OFF)

* When EX-COMP is ON in the EXPOSURE menu.

BRC-H700

MODE setting	Function of VALUE control	Function of BRIGHT control
FULL AUTO	Not used	Exposure compensation level control*
SHUTTER Priority	Shutter speed control	Exposure compensation level control*
IRIS Priority	F-number control	Exposure compensation level control*
GAIN Priority	Gain control	Not used
MANUAL	Shutter speed control	F-number and gain control

* When EX-COMP is ON in the EXPOSURE menu.

BRC-Z700

MODE setting	Function of VALUE control	Function of BRIGHT control
FULL AUTO	Not used	Exposure compensation level control*
SHUTTER Priority	Shutter speed control	Exposure compensation level control*
IRIS Priority	F-number control	Exposure compensation level control*
GAIN Priority	Gain control	Exposure compensation level control*
MANUAL	Shutter speed control	•F-number and gain controls (when the DIP switch 3 at the bottom of the Remote Control Unit is set to ON) •F-number control (when the DIP switch 3 at the bottom of the Remote Control Unit is set to OFF)

* When EX-COMP is ON in the EXPOSURE menu.

BRC-300/300P

MODE setting	Function of VALUE control	Function of BRIGHT control
FULL AUTO	Not used	Exposure compensation level control*
SHUTTER Priority	Shutter speed control	Exposure compensation level control*
IRIS Priority	Iris control	Exposure compensation level control*
BRIGHT	Not used	Brightness level control
MANUAL	Shutter speed control	Iris control

* When EX-COMP is ON in the EXPOSURE menu.

BRC-Z330

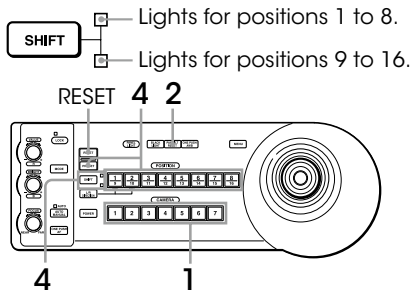
MODE setting	Function of VALUE control	Function of BRIGHT control
FULL AUTO	Not used	Exposure compensation level control*
SHUTTER Priority	Shutter speed control	Exposure compensation level control*
IRIS Priority	F-number control	Exposure compensation level control*
GAIN Priority	Gain control	Exposure compensation level control*
MANUAL	Shutter speed control	•F-number and gain controls (when the DIP switch 3 at the bottom of the Remote Control Unit is set to ON) •F-number control (when the DIP switch 3 at the bottom of the Remote Control Unit is set to OFF)

* When EX-COMP is ON in the EXPOSURE menu.

Storing the Camera Setting in Memory

Storing camera settings: Memory Preset feature

To store the camera settings

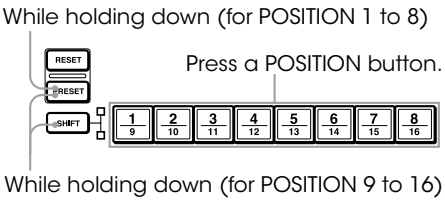


1 Press the CAMERA button to select the required camera.

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

3 Adjust the position, zooming, focusing, and backlighting of the selected camera.

4 While holding down the PRESET button (for positions 1 to 8) or the SHIFT and PRESET buttons (for positions 9 to 16), press any of the POSITION buttons in which you want to store settings.



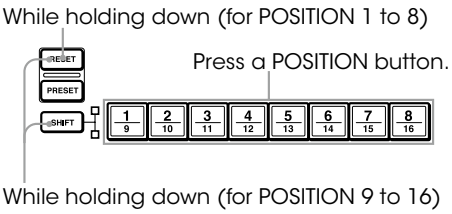
Settings are stored in the memory of the camera. The pressed button flashes during storing. Flashing stops when storing is completed.

To recall the stored settings

Press any of the POSITION buttons in which you have stored the settings. For positions 9 to 16, hold down the SHIFT button and press any of the POSITION buttons.

To cancel the preset memory

While holding down the RESET button (for positions 1 to 8) or the SHIFT and RESET buttons (for positions 9 to 16), press the POSITION button from which you want to cancel the settings.



The pressed button flashes while settings are being cancelled. Flashing stops when the settings have been canceled.

Note Important note:

- 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 position when the power is turned off and turned on again, store those positions in POSITION 1.
- When you are storing or canceling the settings in one position, you cannot call up, store or cancel the settings in another position.

Setting the speed of the camera moving to a preset position

You can select the panning/tilting speed when the camera moves to a preset position.

1 Press the CAMERA button to select the required camera.

2 Press the POSITION button for which you want to set the speed for more than one second. All of the CAMERA buttons, 1 to 7, flash.

3 Press one of the CAMERA buttons to select the speed.

CAMERA button	Panning/tilting speed
1	1 degree/sec.
2	2.2 degree/sec.
3	4.8 degree/sec.
4	11 degree/sec.
5	23.3 degree/sec.
6	43 degree/sec.
7	60 degrees/sec. (default)

Now the camera will move to the position preset to the pressed POSITION button with the selected speed.

To set the speed of the camera moving to a preset position between 9 and 16

Hold down the SHIFT button and press the corresponding POSITION button for more than one second. The POSITION 1 to 8 buttons can be used for positions 9 to 16.

Preset memory (BRC-H900)

The following setting items can be stored in the memory of the camera.

- ● : Setting items are stored in memory. When the power is turned on, the camera starts with these settings.
- ○ : Setting items are stored in memory. Recall the settings by selecting the preset number.
- □ : Setting items are stored in memory. Because only one memory is available for this item, the last preset setting is stored regardless of the preset number, and recalled when the power is turned on. This setting cannot be reset. When the item setting is changed, the new setting is applied, even if the preset is recalled.
- △ : Setting items are stored in memory. When the power is turned on, the camera starts with these settings. This setting cannot be reset by pressing the RESET button. When the item setting is changed, the new setting is applied, even if the preset is recalled.
- – : Setting items are not stored.

General presetting items

Presetting item	Presetting position number	
	1	2 – 16
Pan/tilt position	●	○
ZOOM position	●	○
FOCUS position (only when MODE in the EXPOSURE menu set to MANUAL)	●	○

Presetting menu items

Presetting item	Presetting position number	
	1	2 – 16
EXPOSURE MODE	●	○
AE SPEED	□	
AE LEVEL	□	
AGC	□	
AGC LIMIT	□	
AGC POINT	□	
AUTO SHUTTER	□	
SHUTTER LIMIT	□	
SHUTTER POINT	□	
GAIN (only when MODE in the EXPOSURE menu set to MANUAL)	●	○
SHUTTER (only when MODE in the EXPOSURE menu set to MANUAL)	●	○
IRIS (only when MODE in the EXPOSURE menu set to MANUAL)	●	○
SHUTTER (only when MODE in the EXPOSURE menu set to SHUTTER Pri)	●	○
IRIS (only when MODE in the EXPOSURE menu set to IRIS Pri)	●	○
WHITE BALANCE MODE	●	○
SPEED	□	
OFFSET	●	○
MATRIX	□	
SELECT	□	
LEVEL (MATRIX)	□	
PHASE	□	
R-G	□	
R-B	□	
G-R	□	
G-B	□	
B-R	□	
B-G	□	
R.GAIN (only when MODE in the EXPOSURE menu set to MANUAL)	●	○
B.GAIN (only when MODE in the EXPOSURE menu set to MANUAL)	●	○
DETAIL SETTING	□	
LEVEL (DETAIL)	□	
FREQUENCY	□	
CRISPENING	□	
H/V RATIO	□	
WHITE LIMITER	□	
BLACK LIMITER	□	
V DTL CREATION	□	
KNEE APT LEVEL	□	
COLOR DETAIL SETTING	●	○
LEVEL (COLOR DETAIL)	□	

Presetting item	Presetting position number	
	1	2 – 16
AREA INDICATION	–*1	
SATURATION	□	
PHASE	□	
WIDTH	□	
KNEE SETTING	□	
AUTO KNEE	□	
POINT	□	
SLOPE	□	
KNEE SAT LEVEL	□	
GAMMA SELECT	□	
LEVEL (GAMMA)	□	
BLACK	□	
BLACK GAMMA	□	
FLICKER CANCEL MODE	□	
FREQUENCY	□	
FOCUS MODE	●	○
PAN LIMIT	△	–
LEFT	△	–
RIGHT	△	–
TILT LIMIT	△	–
DOWN	△	–
UP	△	–
RAMP CURVE	△	–
IR RECEIVE	△	–
IMG FLIP*2	△	–
PAN REVERSE	△	–
TILT REVERSE	△	–
DISPLAY INFO	△	–
SYNC MASTER	△	–
HPHASE	△	–
HPHASE FINE	△	–
STEADY SHOT	△	–
COLOR BAR	–*1	
TALLY MODE	△	–
FORMAT (HD OUTPUT)	△	–
ADD SYNC	△	–
SYNC TYPE	△	–
IMG SIZE (SD OUTPUT)	△	–
SETUP*3 (SD OUTPUT)	△	–

Note

*1 The item is set to OFF automatically when the power is turned off and on again even if the item is set to ON while you preset.

*2 The current setting of IMG FLIP is recalled regardless of presetting operations.

*3 The item cannot be stored for 1080/50i or 720/50p output signal.

Presetting menu items while the Interface Card is inserted into BRU-SF10 connected with the camera

Presetting item	Presetting position number	
	1	2 – 16
Menu items displayed only when the HFBK-SA1 is installed		
DSUB OUTPUT 1	△	–
ADD SYNC	△	–
DSUB OUTPUT 2	△	–
IMG SIZE*1	△	–
SETUP (not available for 50i output signal)	△	–
Menu items displayed only when the HFBK-HSD2 is installed		
IMG SIZE*1	△	–

Note

*1 When installed in the BRC-H900 and in use, the IMG SIZE setting is linked with the VIDEO OUT setting.
When two BRBK-SA1 cards are installed in the BRU-SF10, or when a BRBK-SA1 and BRBK-HSD2 are used as SD-SDI, the IMG SIZE settings for both option cards are linked. When two BRBK-HSD2 cards are installed in the BRU-SF10, or when a BRBK-SA1 and BRBK-HSD2 are used as SD-SDI, the IMG SIZE settings for both option cards are linked.

Preset memory
(BRC-H700, BRC-Z700, BRC-Z330, BRC-300/300P)

Preset Memory 1: All of the configurations can be stored.
Preset Memory 2 to 16: Frequently-changed configurations can be stored.
Infrequently-changed configurations cannot be stored.

Note **Before you turn off the camera, you might want to save various camera settings in Preset Memory 1. Otherwise, the camera start operating with the factory settings.**

Category Mode/ Position		BRC-H700	BRC-Z700	BRC-Z330	BRC-300 BRC-300P
Pan/Tilt	Pan/Tilt position	Yes	Yes	Yes	Yes
	Pan limit position	Yes	Yes	Yes	Yes
	Tilt limit position	Yes	Yes	Yes	Yes
	Ramp Curve	Yes	Yes	Yes	—
Zoom	Zoom position	Yes	Yes	Yes	Yes
	Digital zoom limit	Yes	Yes	Yes	Yes
Focus	auto/manual	Yes	Yes	Yes	Yes
	normal/interval/ zoom trig	—	—	—	Yes
	near limit	—	Yes	Yes	—
	af assist	—	Yes	Yes	—
WB	WB mode	Yes	Yes	Yes	Yes
	Auto WB Sense	Yes	Yes	Yes	—
	Auto WB Shift	Yes	Yes	Yes	—
	One Push WB Shift	Yes	Yes	Yes	—
	Manual WB R Gain	Yes	Yes	Yes	Yes
	Manual WB B Gain	Yes	Yes	Yes	Yes
Color	Gain	Yes	Yes	Yes	—
	Hue	Yes	—	Yes	—
	Color matrix	—	Yes	Yes	—
	R.enhance	—	Yes	Yes	—
	G.enhance	—	Yes	Yes	—
	B.enhance	—	Yes	Yes	—
	YL.enhance	—	Yes	Yes	—
	CY.enhance	—	Yes	Yes	—
	MG.enhance	—	Yes	Yes	—
EXPO-SURE	Mode	Yes	Yes	Yes	Yes
	AE Speed (Full Auto)	Yes	Yes	Yes	—
	AGC limit (Full Auto)	Yes	Yes	Yes	—
	Iris limit (Full Auto)	Yes	Yes	Yes	—
	Gain (Manual)	Yes	Yes	Yes	Yes
	Gain (Gain Pri)	Yes	Yes	Yes	—
	Shutter (Manual)	Yes	Yes	Yes	Yes
	Shutter (Shutter Pri)	Yes	Yes	Yes	Yes
	Iris (Manual)	Yes	Yes	Yes	Yes
	Iris (Iris Pri)	Yes	Yes	Yes	Yes
	Bright level	—	—	—	Yes
	Back light	Yes	Yes	Yes	Yes
	Spot light	Yes	Yes	Yes	—
	Ex-comp mode	Yes	Yes	Yes	Yes
	Ex-comp level	Yes	Yes	Yes	Yes
	Spot AE	—	—	—	Yes
	Color AE	—	—	Yes	—
	ND Filter	—	—	Yes	—

Category Mode/ Position		BRC-H700	BRC-Z700	BRC-Z330	BRC-300 BRC-300P
Picture	Effect Mode	—	—	—	Yes
	Wide	—	—	—	Yes
	Aperture (Detail)	Yes	Yes	Yes	Yes
	B&W	Yes	Yes	Yes	—
	Skintone detail	Yes	—	—	—
	Gamma	Yes	Yes	Yes	—
	Flicker cancel	Yes	Yes	Yes	—
	Steady shot	Yes	Yes	—	—
	Color bar	No	No	No	—
	Color detail mode	—	Yes*2	Yes*2	—
	Color detail phase	—	Yes	Yes	—
System	Data mix	—	—	—	Yes
	Ir receive	Yes	Yes	Yes	Yes
	Img flip	Yes	Yes	Yes	Yes
	Pan reverse	Yes	Yes	Yes	Yes
	Tilt reverse	Yes	Yes	Yes	Yes
	Display info	Yes	Yes	Yes	Yes
	Analog out	Yes	Yes	Yes	—
	Add sync	Yes	Yes	Yes	—
	Sync type	Yes	Yes	Yes	—
	Sync master	Yes	Yes	Yes	—
	H phase	—	Yes	Yes	—
ANALOG OUT*3	Output 1	—	—	—	Yes
	Sync (Output 1)	—	—	—	Yes
	Output 2	—	—	—	Yes
DOWN CON-VERTER*4	D-Sub out 1	Yes	Yes	—	—
	Add sync (D-sub out1)	Yes	Yes	—	—
	D-Sub out 2	Yes	Yes	—	—
	Img-size	Yes	Yes	—	—
HD-SDI*5	Analog out	Yes	Yes	—	—
	Sync/vd	Yes	Yes	—	—
	Add sync	Yes	Yes	—	—
PC-OUTPUT*6	Img size	Yes	Yes	—	—
	Sync	Yes	Yes	—	—
	Vd	Yes	Yes	—	—
HDV*7	Audio delay	Yes	Yes	—	—
SD-SDI*8	IMG-SIZE	—	Yes	—	—

Category Mode/ Position		BRC-H700	BRC-Z700	BRC-Z330	BRC-300 BRC-300P*1
Pan/Tilt	Pan/Tilt position	Yes	Yes	Yes	Yes
	Pan limit position	No	No	No	No
	Tilt limit position	No	No	No	No
	Ramp Curve	No	No	No	—
Zoom	Zoom position	Yes	Yes	Yes	Yes
	Digital zoom limit	Yes	Yes	Yes	Yes
Focus	auto/manual	Yes	Yes	Yes	Yes
	normal/interval/ zoom trig	—	—	—	—
	near limit	—	Yes	Yes	—
	af assist	—	Yes	Yes	—
WB	WB mode	Yes	Yes	Yes	Yes
	Auto WB Sense	Yes	Yes	Yes	—
	Auto WB Shift	Yes	Yes	Yes	—
	One Push WB Shift	Yes	Yes	Yes	—
	Manual WB R Gain	Yes	Yes	Yes	Yes
	Manual WB B Gain	Yes	Yes	Yes	Yes
Color	Gain	Yes	Yes	Yes	—
	Hue	Yes	—	Yes	—
	Color matrix	—	Yes	Yes	—
	R.enhance	—	Yes	Yes	—
	G.enhance	—	Yes	Yes	—
	B.enhance	—	Yes	Yes	—
	YL.enhance	—	Yes	Yes	—
	CY.enhance	—	Yes	Yes	—
	MG.enhance	—	Yes	Yes	—
EXPO-SURE	Mode	Yes	Yes	Yes	Yes
	AE Speed (Full Auto)	Yes	Yes	Yes	—
	AGC limit (Full Auto)	Yes	Yes	Yes	—
	Iris limit (Full Auto)	Yes	Yes	Yes	—
	Gain (Manual)	Yes	Yes	Yes	Yes
	Gain (Gain Priority)	Yes	Yes	Yes	—
	Shutter (Manual)	Yes	Yes	Yes	Yes
	Shutter (Shutter Priority)	Yes	Yes	Yes	Yes
	Iris (Manual)	Yes	Yes	Yes	Yes
	Iris (Iris Priority)	Yes	Yes	Yes	Yes
	Bright level	—	—	—	Yes
	Back light	Yes	Yes	Yes	Yes
	Spot light	Yes	Yes	Yes	—
	Ex-comp mode	Yes	Yes	Yes	Yes
	Ex-comp level	Yes	Yes	Yes	Yes
	Spot AE	—	—	—	No
	Color AE	—	—	Yes	—
	ND Filter	—	—	Yes	—

Category Mode/ Position		BRC-H700	BRC-Z700	BRC-Z330	BRC-300 BRC-300P*1
Picture	Effect Mode	—	—	—	No
	Wide	—	—	—	No
	Aperture (Detail)	Yes	Yes	Yes	Yes
	B&W	Yes	Yes	Yes	—
	Skintone detail	Yes	—	—	—
	Gamma	Yes	Yes	Yes	—
	Flicker cancel	Yes	Yes	Yes	—
	Steady shot	Yes	Yes	—	—
	Color bar	No	No	No	—
	Color detail mode	—	Yes*2	Yes*2	—
	Color detail phase	—	Yes	Yes	—
System	Data mix	—	—	—	No
	Ir receive	No	No	No	No
	Img flip	No	No	No	No
	Pan reverse	No	No	No	No
	Tilt reverse	No	No	No	No
	Display info	No	No	No	No
	Analog out	No	No	No	—
	Add sync	No	No	No	—
	Sync type	No	No	No	—
	Sync master	No	No	No	—
	H phase	—	No	No	—
ANALOG OUT*3	Output 1	—	—	—	No
	Sync (Output 1)	—	—	—	No
	Output 2	—	—	—	No
DOWN CON-VERTER*4	D-Sub out 1	No	No	—	—
	Add sync (D-sub out1)	No	No	—	—
	D-Sub out 2	No	No	—	—
	Img-size	No	No	—	—
HD-SDI*5	Analog out	No	No	—	—
	Sync/vd	No	No	—	—
	Add sync	No	No	—	—
PC-OUT-PUT*6	Img size	No	No	—	—
	Sync	No	No	—	—
	Vd	No	No	—	—
HDV*7	Audio delay	No	No	—	—
SD-SDI*8	IMG-SIZE	—	No	—	—

Note

*1: For the BRC-300, the preset memories from 7 to 16 are not available.

*2: You cannot save 'CHECK' in color detail mode.

*3: This function is available when BRBK-301 is inserted to the BRC-300/300P or BRU-300/300P.

*4: This function is available when HFBK-SD1 is inserted to the BRC-H700 or the BRU-H700.

*5: This function is available when HFBK-HD1 is inserted to the BRC-H700 or the BRU-H700.

*6: This function is available when HFBK-XG1 is inserted to the BRC-H700 or the BRU-H700.

*7: This function is available when HFBK-TS1 is insereted to the BRC-H700 or the BRU-H700.

*8: This function is available when using the BRBK-HSD1 and the optional video card's HD/SD switch is set to SD side.

8 Operation with the RM-IP10 IP Remote Controller

The BRC-H900, BRC-Z700 and BRC-Z330 can be controlled by the RM-IP10 IP Remote Controller.

8.1 Required Equipment

IP remote controller: RM-IP10

You can control up to 112 cameras that are compatible with IP connection, and you can add up to five IP remote controllers in the same network.
The joystick of the IP remote controller allows comfortable pan/tilt and zoom operations.
You can also select the RS-232C or RS-422 connection and operate up to seven cameras.

Note Select the LAN, RS-232C or RS-422 connection. You cannot use multiple communication methods simultaneously.

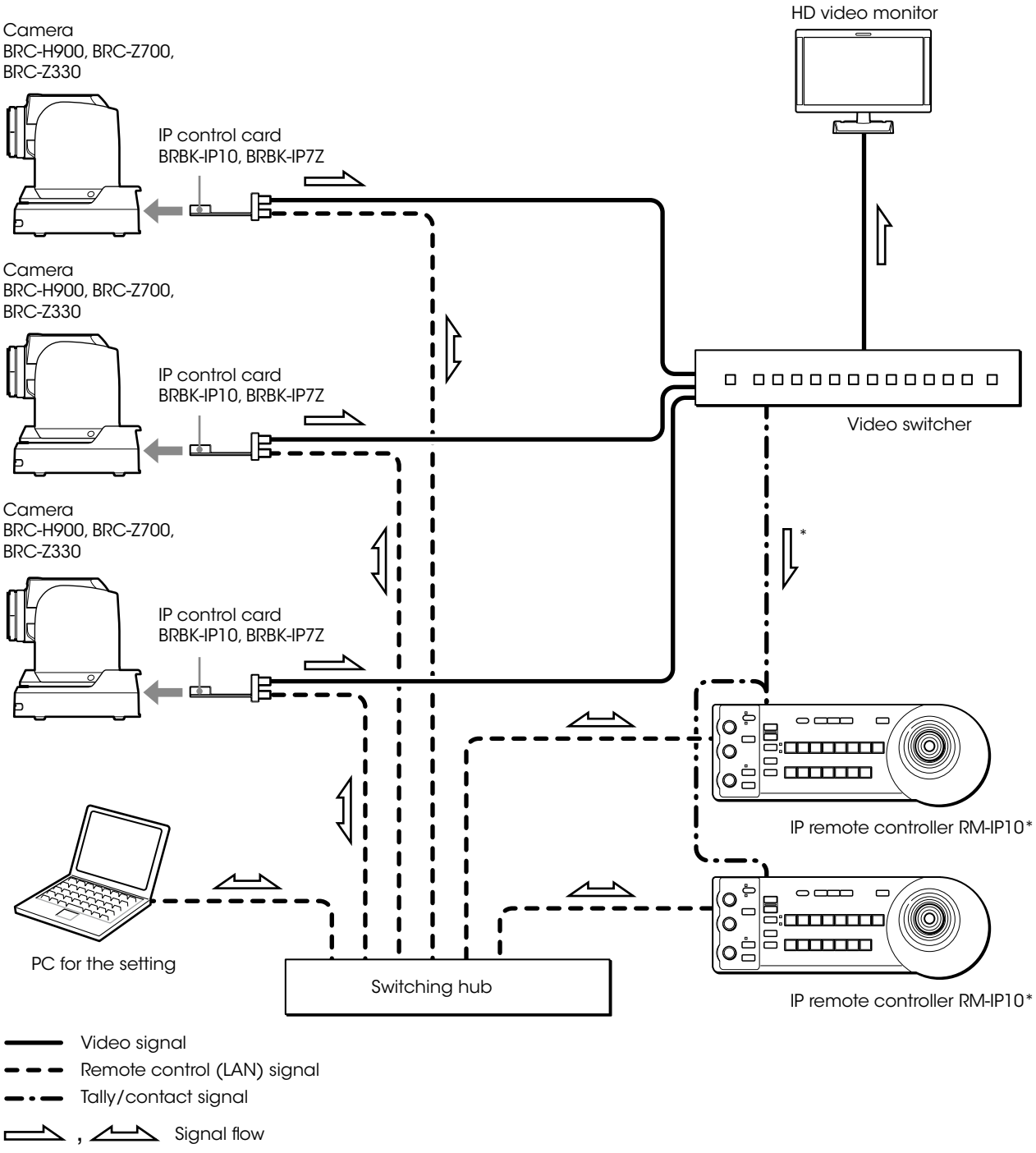
IP control card: BRBK-IP10 (for BRC-H900 or BRC-Z330)

By inserting this card into BRC-H900/Z330, the camera can use an IP connection.
This card outputs an HD-SDI signal conforming to SMPTE 292 serial digital interface standards, or outputs an SD-SDI signal conforming to SMPTE 259M serial digital interface standards. An audio signal is not output from the card.

IP control card: BRBK-IP7Z (for BRC-Z700)

By inserting this card into BRC-Z700, the camera can use an IP connection.
This card outputs an HD-SDI signal conforming to SMPTE 292 serial digital interface standards, or outputs an SD-SDI signal conforming to SMPTE 259M serial digital interface standards. An audio signal is not output from the card.

8.2 System Configuration



*Connect the tally connector (outputs the camera number that is on-air) of the video switcher to the TALLY/CONTACT connector of RM-IP10. If there are multiple RM-IP10s, connect the same signal to all the TALLY/CONTACT connectors. In this case, set the TALLY/CONTACT switch (DIP 1 switch 4 and 5) to the ON AIR TALLY mode for all RM-IP10s. When a camera is on-air, the CAMERA button on RM-IP10 lights in red. (This function will be supported by version 2.0 or later).

For details of connection and settings, refer to the operating instructions of the IP remote controller.

Note

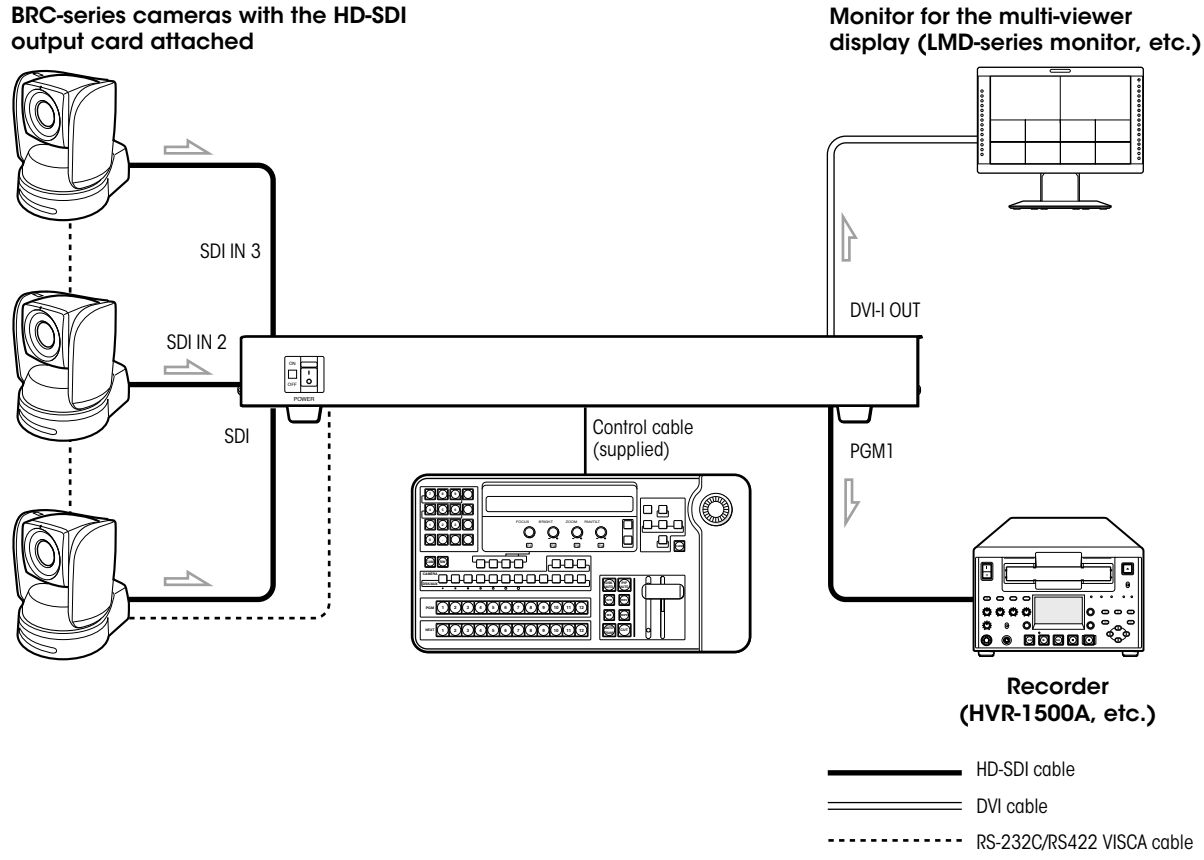
- You cannot use the RS-232C and RS-422 connections when using the IP connection. When BRBK-IP10/IP7Z is attached to the camera, the RS-232C/RS-422 connector does not work.
- When outputting an HD-SDI signal from BRBK-IP7Z, the signal delays about 4H in comparison with a Y/Pb/Pr or RGB signal that is output from the camera.

9 Operation with the BRS-200 Remote Camera Operating Switcher

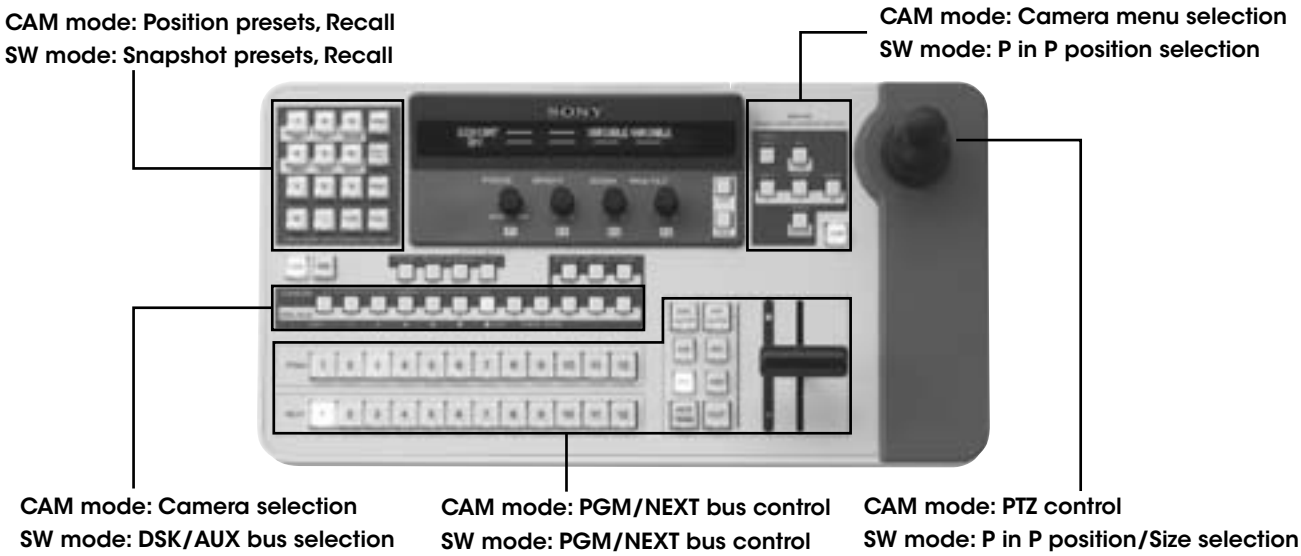
The BRC Series can be remotely controlled by the BRS-200 Remote Camera Operating Switcher.

Note Connection with the BRC-H900 is not guaranteed to operate.

9.1 System Configuration

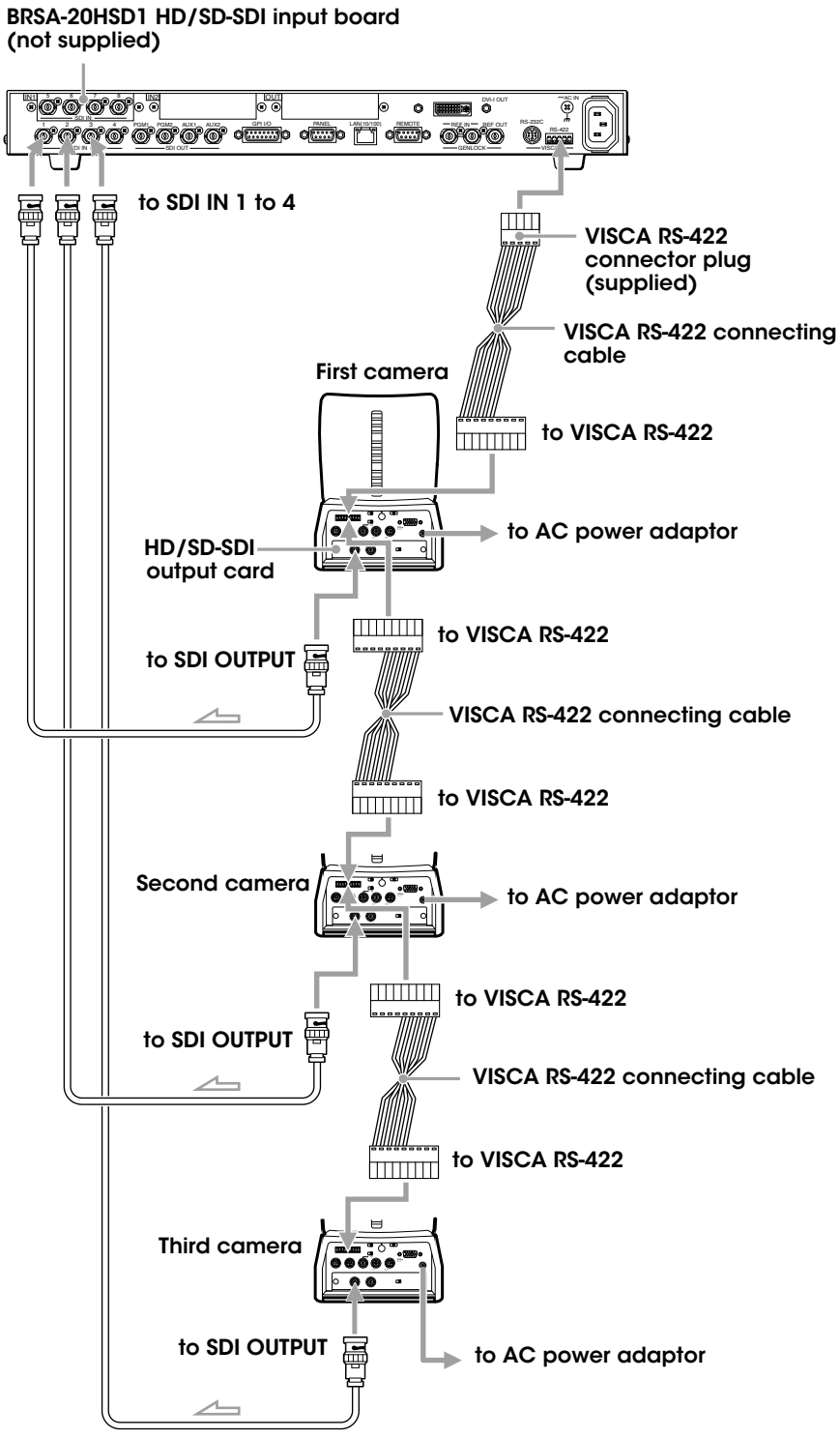


9.2 CAM mode/Switcher mode



9.3 Connecting the BRC Series with the BRS-200 (RS-422)

Up to seven cameras of the BRC Series can be connected to the BRS-200. This connection is one example using the RS-422 connection.



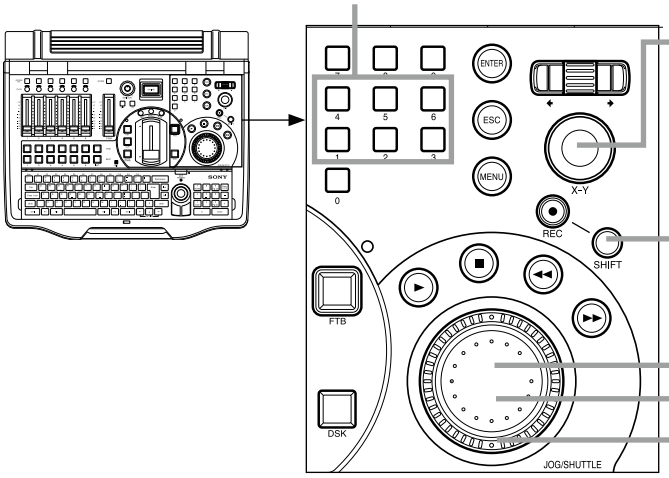
10 Operation with the AWS-G500 Series Anycast Station

The BRC Series can be remotely controlled by the AWS-G500 Series Anycast Station.

Note Connection with the BRC-H900 is not guaranteed to operate.

10.1 Controlling cameras with the AWS-G500 Series Anycast Station

You can set and select a maximum of six camera presets, such as the Pan, Tilt, Zoom, and Focus settings, and more. For the BRC-H700, the BRC-Z700, and the BRC-Z330, preset positions from 7 to 16 are not available.



Move the positioner for pan (which moves the camera shooting direction horizontally) control and tilt (which moves the camera shooting direction vertically) control.

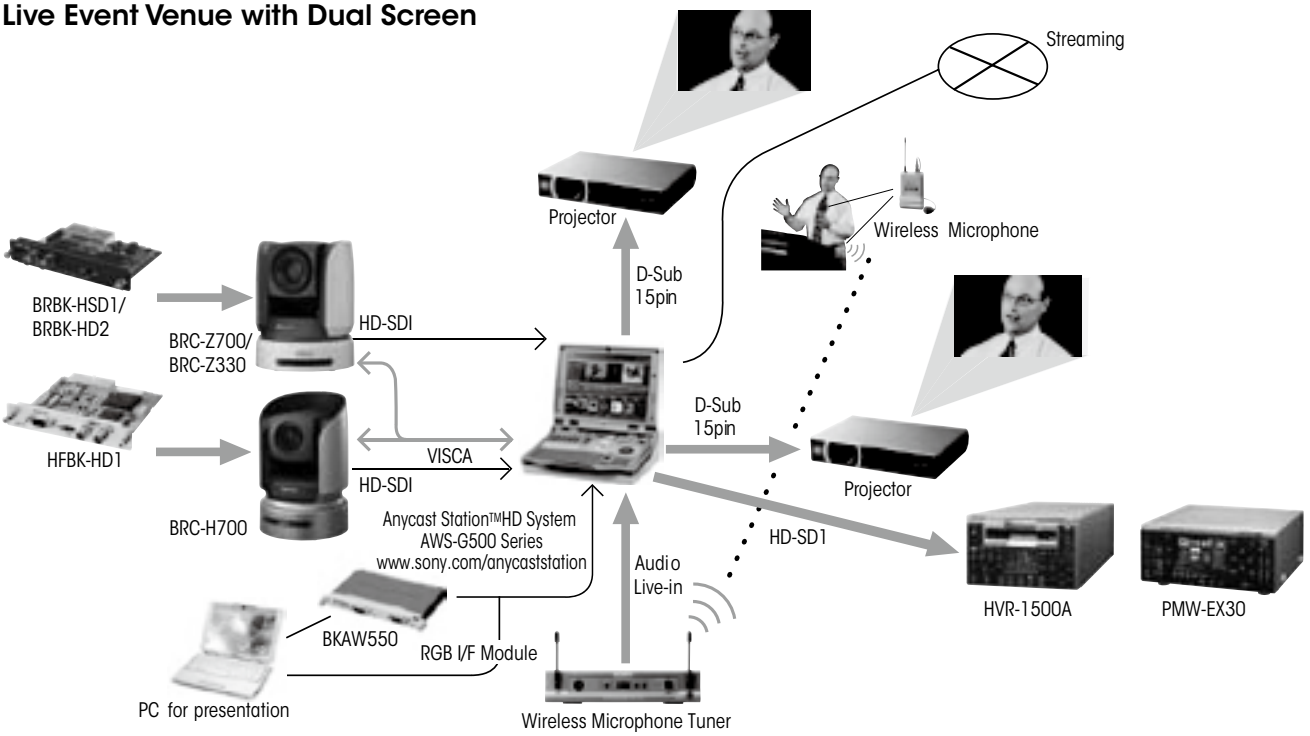
Hold down the SHIFT button and turn the jog dial to adjust the iris (aperture). Turning clockwise opens the iris, and turning counterclockwise stops down the iris (when setting manually).

Turn the jog dial to adjust the focus. Turning clockwise focuses further away and turning counterclockwise focuses closer (when setting manually).

Turn the shuttle dial to control the zoom. Turning clockwise zooms in (telephoto) and turning counterclockwise zooms out (wide angle)

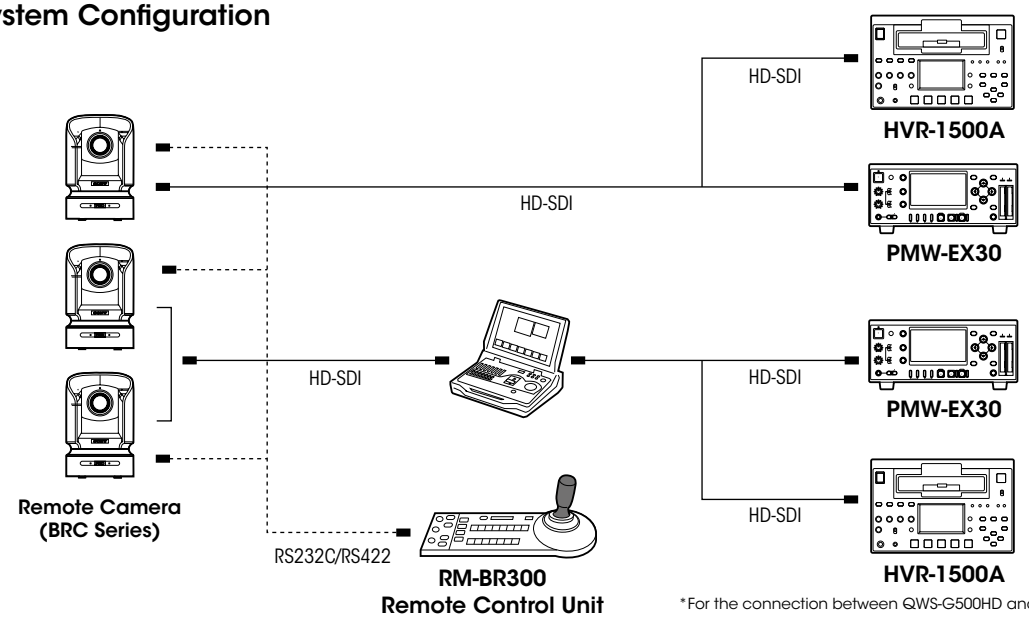
Note The camera number selected by the AWS-G500 Series Anycast Station does not correspond to the camera number assigned manually by DIP switches.

Live Event Venue with Dual Screen



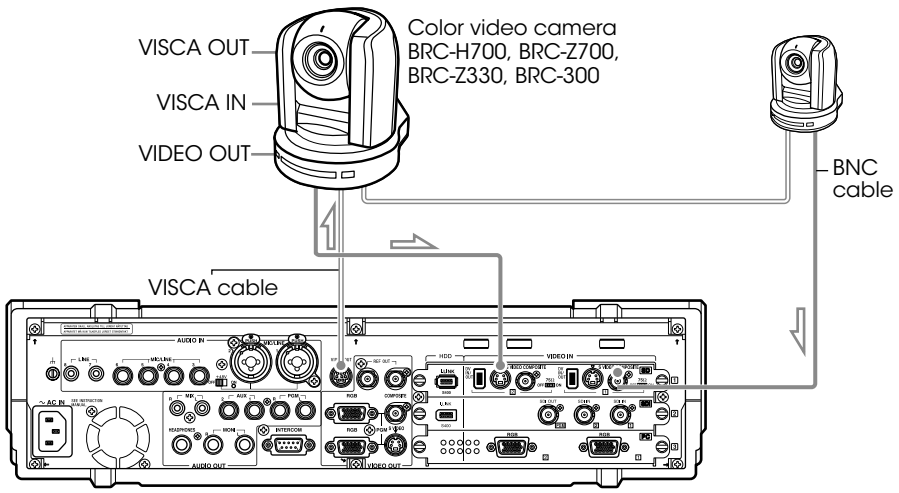
For more detailed information, please refer to the operation manual of the AWS-G500 Series

System Configuration



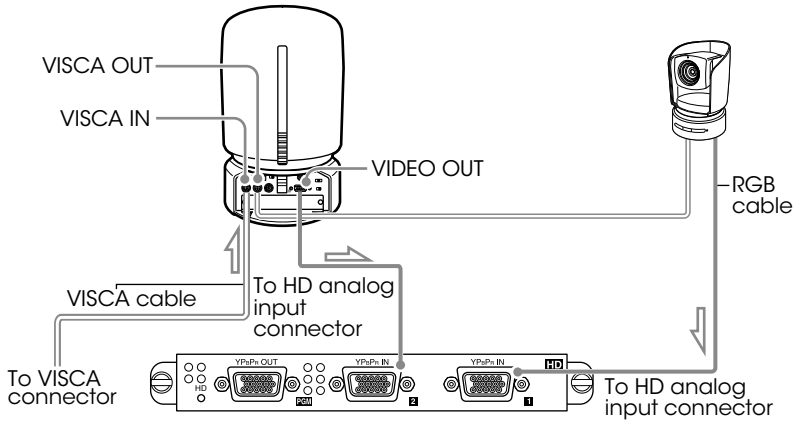
*For the connection between QWS-G500HD and the RM-BR300. please refer to 9.3.

10.2 Controlling the camera with VISCA support



Note When connecting a BRC-300/300P camera, connect to the DV, RGB, and SDI input connectors in accordance with the camera's option board.

When an HD Video Interface module is Connected (BRC-H700, BRC-Z700/BRC-Z330)

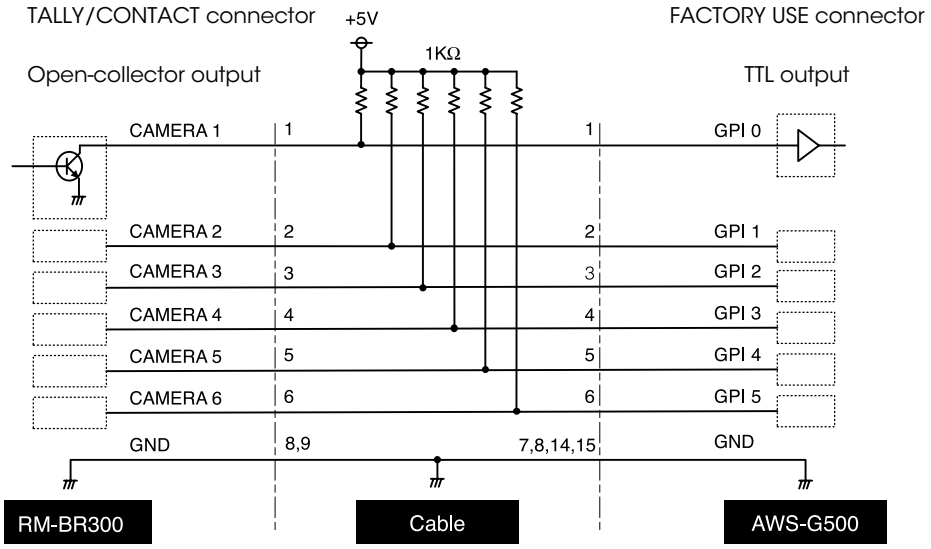


Note
- VISCA cables up to 15 m (50 ft) are recommended to operate correctly.
- When connecting a BRC-H700/BRC-Z700/BRC-Z330 camera, connect to the RGB, SDI, and HD analog input connectors in accordance with the camera's option board.

10.3 Operating the PGM and NEXT Selection buttons from the RM-BR300

When you connect the RM-BR300 to the FACTORY USE connector on the AWS-G500, you can perform switching for the PGM and NEXT selection buttons from the RM-BR300.
Refer to the following diagram to prepare the cables.

Sample Circuit diagram



For details, consult your dealer or your Sony service representative.

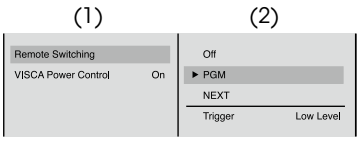
Caution
- Pull-up of all signal lines is necessary.
- Set TRIGGER to LOW LEVEL (this section is made in Remote Switching in the Video utility)
- On the RM-BR300, set the TALLY/CONTACT switch to CONTACT.

1 Connect the RM-BR300 to the FACTORY USE connector.

2 Press the MENU button.

3 In the top menu, select [Video Utility]

4 (1) select [Remote Switching], and confirm;
(2) select the buttons to be controlled by the RM-BR300, and confirm.



The functions of the setting items are as follows.

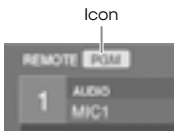
[Off]: Disables switching from the RM-BR300.

[PGM]: Enables switching operations for PGM selection buttons 1 to 6 from the RM-BR300.

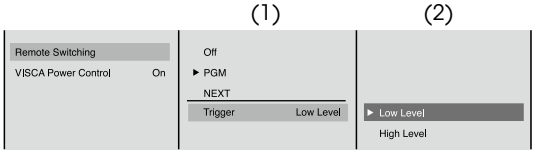
[NEXT]: Enables switching operations for NEXT selection buttons 1 to 6 from the RM-BR300. Use this to perform VISCA camera control. When the KEY button is lit, you can make key source selections.

Caution Connect the RM-BR300 before configuring this setting.

Note When [Remote Switching] is enables, the following icon appears.
Example: When [PGM] is selected.



5 (1) Select [Trigger], and confirm;
(2) select an input level, and confirm.



The functions of the setting items are as follows.

[Low Level]: Triggers remote switching when input levels become low.

[High Level]: Triggers remote switching when input levels become high.

6 Press the MENU button to close the menu.

11 Using the BRC Series Cameras as a Second Camera for the Sony Video Conferencing Systems

Using the BRC Series Cameras as a Second Camera for the PCS-XG100/PCS-XG77 Video Conferencing Systems

You can connect the BRC-H900/BRC-H700/ BRC-Z700/BRC-Z330 to the PCS-XG100/PCS-XG77.

Connection example for a second camera

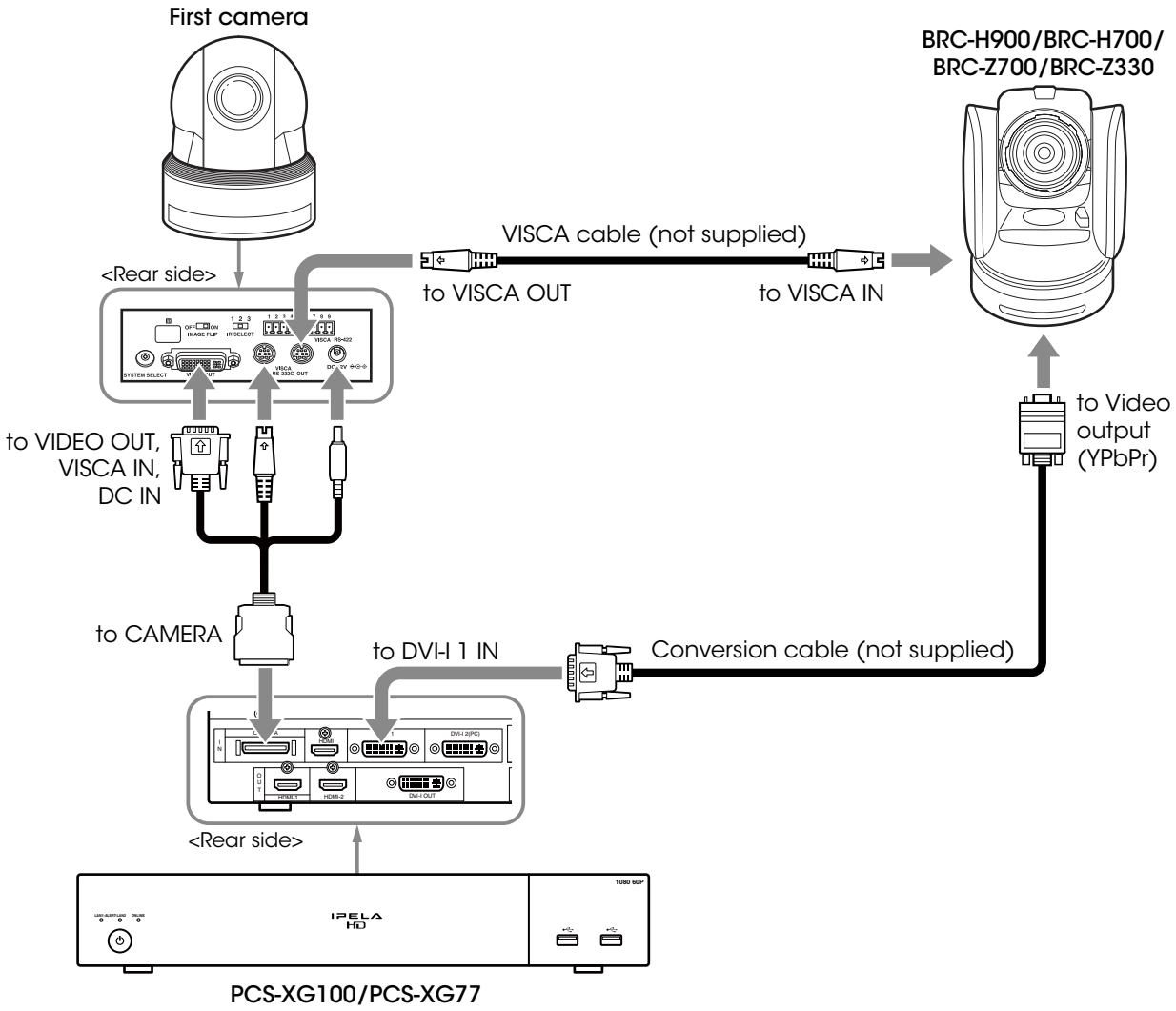
Connect the video output connector on the BRC-H900/BRC-H700/BRC-Z700/BRC-Z330 to the "DVI-I 1" on the Codec unit using conversion cable.

Select "DVI-I 1" in "Second Camera Input" of the Camera setup menu.

To switch the picture shot by two cameras

When the camera input selection is available, the instruction "F2: Switches to the first camera." Or "F2: Switches to the second camera." is displayed at the bottom of the monitor screen. Each press of the F2 button on the Remote commander changes the picture shot by each camera.

Note PCS-XG80 and PCS-XG55 support BRC-H700/ BRC-Z700/BRC-Z330 as a second camera.



12 Specifications

	BRC-H900	BRC-H700	BRC-Z700	BRC-Z330	BRC-300	BRC-300P
Camera						
Image Sensor	1/2-type Exmor CMOS x3	1/3-type IT CCD x3	1/4-type CMOS x3	1/3-type CMOS	1/4.7-type IT Advanced HAD CCD x3	
Image Sensor (Number of Effective Pixels)	Approx. 2.07 Megapixels	Approx. 1.07 Megapixels	Approx. 1.04 Megapixels	Approx. 2.16 Megapixels	Approx. 1.02 Megapixels	
Signal System	60 Hz: 1080/59.94i, 720/59.94P, NTSC 50 Hz: 1080/50i, 720/50P, PAL	60 Hz: 1080/59.94i 50 Hz: 1080/50i	60 Hz: 1080/59.94i, NTSC 50 Hz: 1080/50i, PAL	60 Hz: 1080/59.94i, 720/59.94P, NTSC 50 Hz: 1080/50i, 720/50P, PAL	NTSC	PAL
Sensitivity	F10	NA				
Minimum Illumination (50IRE)	4 lx (50IRE, F1.9, +24 dB)	6 lx (50IRE, F1.6, +18 dB)	6 lx (50 IRE, F1.6, +24 dB)		NA	
Minimum Illumination (25IRE)	NA				7 lx (25IRE, F1.6, +18dB)	7 lx (25IRE, F1.6, +18dB)
Horizontal Resolution	>1,000 TV line (in HD-SDI output) (center)	NA				
S/N Ratio	50 dB					
Gain	Auto/Manual (-3 dB to +24 dB)	Auto/Manual (0 dB to +18 dB and Hyper Gain)	Auto/Manual (0 to +24 dB and Hyper Gain)	Auto/Manual (-3 dB to +24 dB and Hyper Gain)	Auto/Manual (-3 dB to +18 dB, 3 dB steps) switchable	
Shutter Speed	1/8,000 s to 1/60 s or 1/8,000 s to 1/50 s	1/10,000 s to 1/60 s or 1/10,000 s to 1/50 s			NTSC: 1/10,000 s to 1/4 s	PAL: 1/10,000 s to 1/3 s
Exposure Control	Auto, Manual, Priority mode (shutter priority & iris priority), Back light, Spot light	Auto, Manual, Priority mode (shutter priority, Gain priority & iris priority), EV compensation		Auto, Manual, Priority mode (shutter priority, Gain priority & iris priority), EV compensation, Color AE	Auto, Manual, Priority mode (shutter priority & iris priority), Bright, spot AE	
Color AE Function	No			Off/Narrow/STD/Wide switchable in menu	No	
White Balance	Auto/Indoor/Outdoor/One-push/Manual		Auto1/Auto2/Indoor/Outdoor/One-push/Manual		Auto/Indoor/Outdoor/One-push/Manual	
Optical Zoom	14x	12x	20x	18x	12x	
Digital Zoom	–	4x	4x	4x	4x	
Focusing System	Auto/Manual					
Horizontal Viewing Angle	59.6°(Wide-end)	60.3°(Wide-end)	55.2°(Wide-end)	55.1°(Wide-end)	4:3 mode: 37.8°, 16:9 mode: 45.4°(Wide end)	
Focal Length	f=5.8 mm to 81.2 mm F1.9 (Wide), F2.8 (Tele)	f = 4.5 mm to 54 mm F1.6 (Wide), F2.8 (Tele)	f = 3.9 mm to 78 mm F1.6 (Wide), F2.8 (Tele)	f=4.6 mm to 82.8 mm F1.6 (Wide), F2.2 (Tele)	f = 3.6 mm to 43.2 mm F1.6 (Wide), F2.8 (Tele)	
Minimum Object Distance	800mm	500 mm (Wide) 800mm (Tele)	10 mm (Wide, Limiter Off) 500 mm (Wide, Limiter On) 800 mm (Tele)	100 mm (Wide, Limiter Off) 500 mm (Wide, Limiter On) 1,500 mm (Tele)	300 mm (Wide) 800 mm (Tele)	
Pan/Tilt Angle	Pan: ±170° Tilt: +90°/-30°			Pan: ±175° Tilt: +90°/-30°	Pan: ±170° Tilt: +90°/-30°	
Pan/Tilt Speed	Pan: 0.22° to 60°/s Tilt: 0.22° to 60°/s	Pan: 0.25° to 60°/s Tilt: 0.25° to 60°/s	Pan: 0.22° to 60°/s Tilt: 0.22° to 60°/s	Pan: 0.25° to 60°/s Tilt: 0.25° to 60°/s	Pan: 0.25° to 60°/s Tilt: 0.25° to 60°/s	
Preset Position	16				6	
Image Stabilization	On/Off (Optical)	On/Off (Optical)	On/Off (Optical)	No	No	
Image Flip	On/Off	On/Off	On/Off	On/Off	On/Off	
ND Filter	No	Off/ND1/ND2	No	Off/ 1/4 / 1/16 switchable in menu	No	
Gamma	STD1/STD2/STD3/STD4/CINE1/CINE2/CINE3/CINE4	Normal/Cinema	Normal/Cinema	Normal/Cinema	No	
Interface						
HD Video Output	HD/SD-SDI(switchable) Component (Y/Pb/Pr) or RGB, HD, VD or SYNC	Component (Y/Pb/Pr) or RGB, HD, VD or SYNC			—	
SD Video Output	Composite, Y/C	No	Composite, Y/C		VBS, Y/C	
Camera Control Interface	RS-232C/RS-422 (VISCA)					
External Sync. Input	Yes					
General						
Power Requirements	DC 10.8 V to 13.2 V				DC 12 V	
Power Consumption	Max 28.8 W (without optional cards)	Max 24 W (without optional cards)	Max 28.8 W (without optional cards)	Max 18 W (without optional cards)	21.6 W (without optional cards)	
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 (W x H x D)	198 x 260 x 238mm (7 7/8 x 10 1/4 x 9 3/8 inch)	207 x 310.8 x 207 mm (8 1/4 x 12 1/4 x 8 1/4 inches)	198 x 247 x 238 mm (7 7/8 x 9 3/4 x 9 3/8 inches)	160.8 x 186 x 193.4mm (6 3/8 x 7 3/8 x 7 5/8 inches)	180 x 210.1 x 205 mm (7 1/8 x 8 3/8 x 8 1/8 inches)	
Mass	5.0 kg (11 lb 0.37 oz)	4.5 kg (9 lb 15 oz)	4.5 kg (9 lb 15 oz)	1.9 kg (4 lb 4 oz)	2.5 kg (5 lb 8 oz)	
Supplied Accessories	IR Remote Commander Unit (1), AC power adaptor (1), AC power cord (1), RS-422 connector plug (1), Ceiling bracket (2), Wire rope (1), Screws (M3 x 8) (7), Screws (M4 x 8) (1), Operating instructions (1)				IR Remote Commander Unit (1), AC power adaptor (1), AC power cord (1), RS-422 connector plug (1), Ceiling bracket (2), Wire rope (1), Screws (7), Operating instructions (1)	

	BRU-H700	BRU-SF10	BRU-300	BRU-300P
Interfaces				
Optical fiber connector	LC Duplex Fiber Connector			
Optical cable type	Multi-mode	Single-mode	Multi-mode	Multi-mode
HD video output	D-Sub 15 pin: Component (Y/Pb/Pr) or RGB, HD, VD or SYNC		—	
SD video output	—		BNC: Composite (NTSC), Mini DIN 4 pin: Y/C	BNC: Composite (PAL), Mini DIN 4 pin: Y/C
External sync input	BNC			
External sync output	BNC			
Audio line output	Phono jack x2 (L/R)		—	
Camera control	Mini DIN 8 pin: RS-232C (VISCA IN), Mini DIN 8 pin: RS-232C (VISCA OUT), Connector plug 9 pin: RS-422 (VISCA IN/OUT)			
Optional card slots	2 slots		2 slots (When both slots are used simultaneously, the interface cards must be of two different types.)	
General				
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)			
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)			
Power requirements	AC 100 V to 240 V (50/60 Hz)	DC 12 V	AC 100 V to 240 V (50/60 Hz)	
Power consumption	Max. 10 W (without optional cards)	Max. 15.6 W (without optional cards)	Max. 9 W (without optional cards)	
Dimensions (W x H x D)	210 x 86 x 240 mm (8 3/8 x 3 1/2 x 9 1/2 inches)		212 x 88 x 210 mm (8 3/8 x 3 1/2 x 8 3/8 inches)	
Mass	2.4 kg (5 lb 5 oz)	2.0 kg (4 lb 7 oz)	2.1 kg (4 lb 10 oz)	
Supplied accessories	AC power cord, RS-422 connector plug, RS-232C cable (3 m, Mini DIN 8 pin), Operating instructions	AC adapter, Power cord, DC-cord secure connection attachment, RS-232C connecting cable, RS-422 connector plug, Operationg Instructions	AC power cord, RS-422 connector plug, RS-232C cable (3 m, Mini DIN 8 pin), Operating instructions	

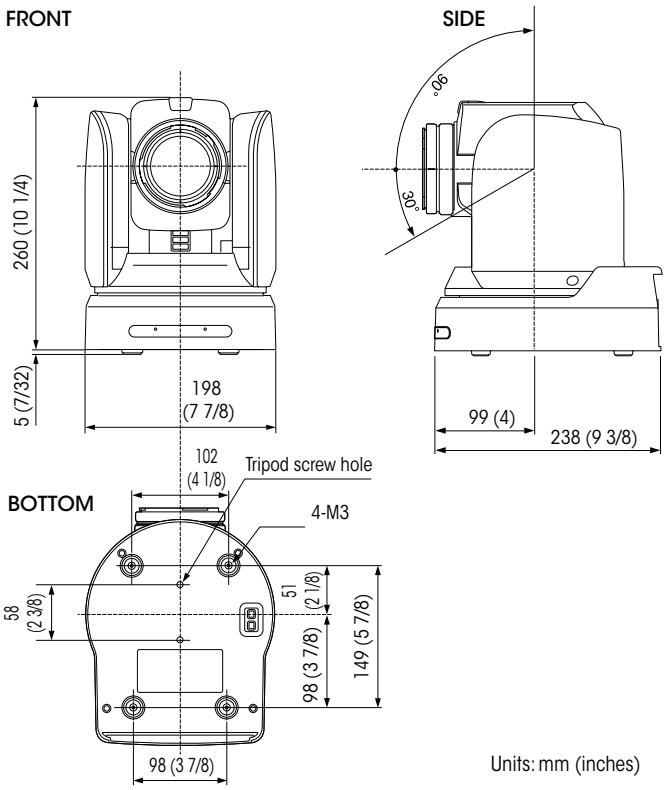
	HFBK-HD1	HFBK-SD1	HFBK-XG1	HFBK-TS1	BRBK-MF1	BRBK-HSD1	BRBK-HD2	BRBK-303
Video output	D-Sub 15 pin: Component (Y/Pb/Pr) or RGB, HD, VD or SYNC BNC x2: HD-SDI	D-Sub 9 pin: Component (Y/Pb/Pr) or RGB, Composite or Y/C, SYNC BNC: Composite BNC: SD-SDI	D-Sub 15 pin: RGB, HD, VD (WXGA/XGA/VGA)	i.LINK 6 pin: HDV OUT (IEEE1394 S100)	LC Duplex Fiber Connector	BNC x2: HD-SDI or SD-SDI	HD-SDI	LC Duplex Fiber Connector
Audio line input	—	—	—	Phono jack x2 (L/R)	Phono jack x2 (L/R)	—	—	—

	BRBK-301	BRBK-302	BRBK-304	BRBK-HSD2	BRBK-SA1	BRBK-SF1	BRBK-IP10	BRBK-IP7Z
Video output	D-Sub 9 pin: Component (Y/Pb/Pr) or RGB, Composite or Y/C, SYNC	BNC: SD-SDI	i.LINK 6 pin: DV OUT (IEEE1394 S100)	BNC x3, HD-SDI or SD-SDI	BNC x1: VIDEO, Mini DIN 4pin x1: S VIDEO, D-sub 9pin x1: RGB/SYNC	LC Duplex Fiber Connector	BNC x2: HD-SDI or SD-SDI*	BNC x2: HD-SDI or SD-SDI
Audio line input	—	—	—	—	—	Phono jack x2 (L/R)	RJ-45 x1: 10Base-T/100Base-TXAuto	RJ-45 x1: 10Base-T/100Base-TXAuto

* DATA MIX ON/OFF selectable in HD-SDI

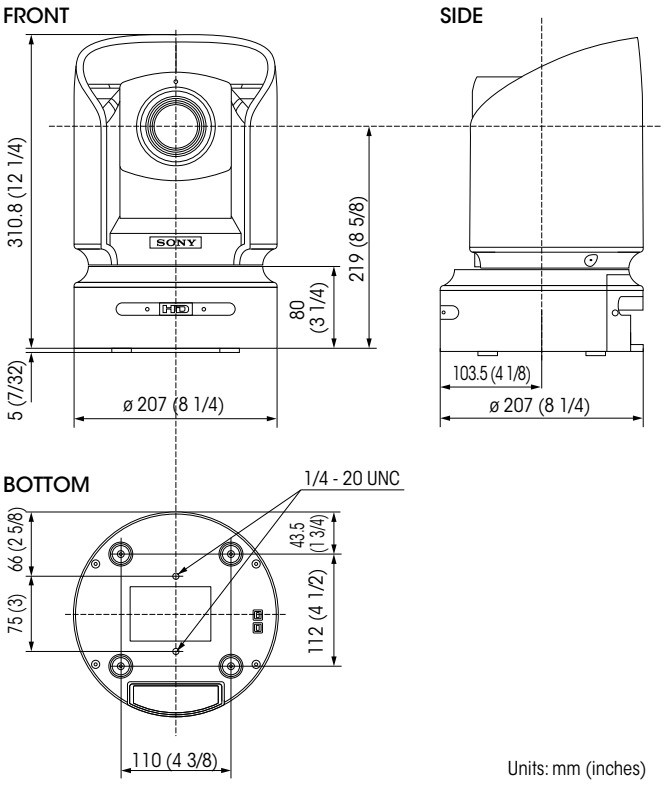
13 Dimensions

BRC-H900



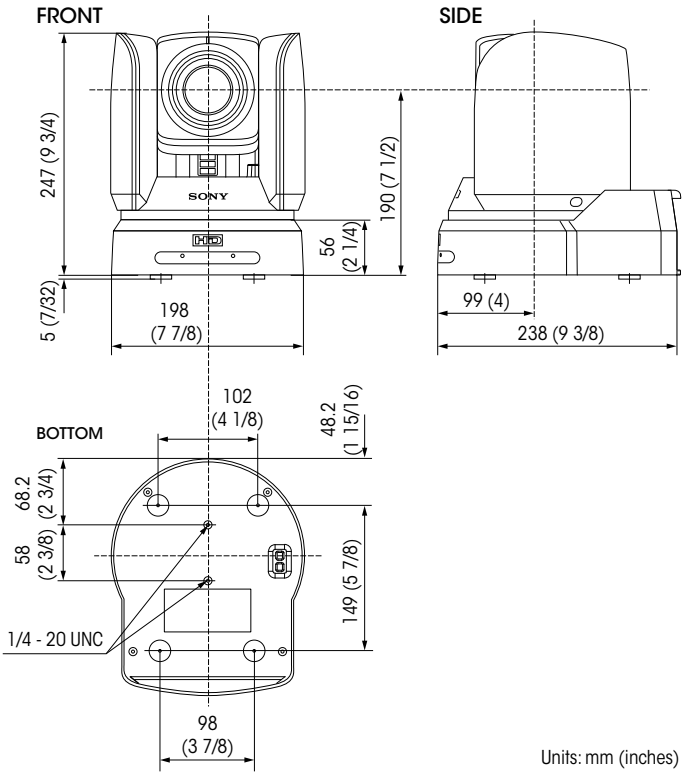
Units: mm (inches)

BRC-H700



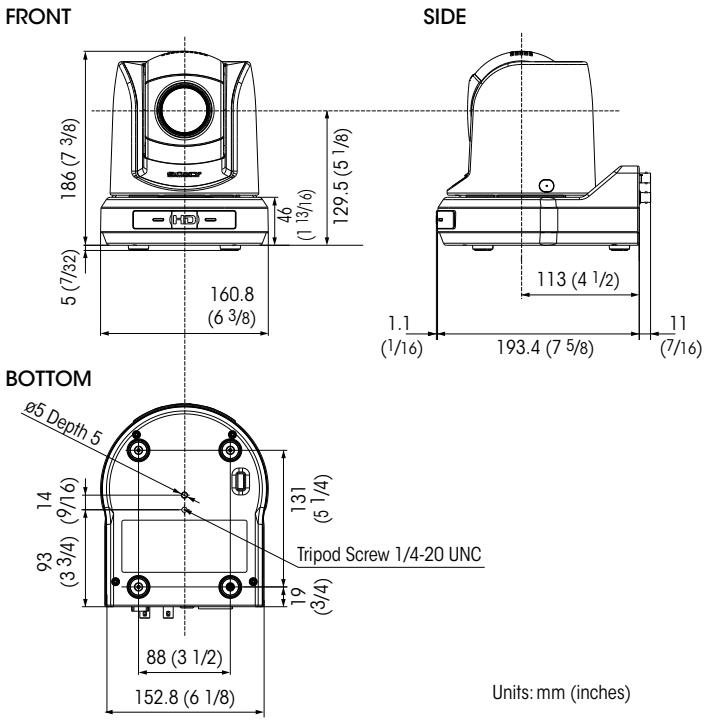
Units: mm (inches)

BRC-Z700



Units: mm (inches)

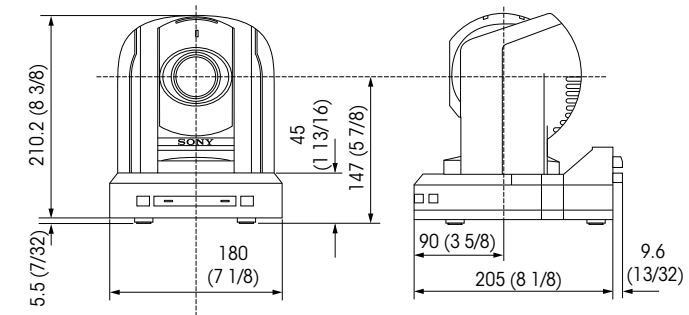
BRC-Z330



Units: mm (inches)

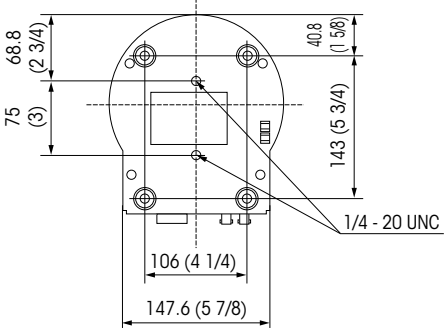
BRC-300/300P

FRONT



SIDE

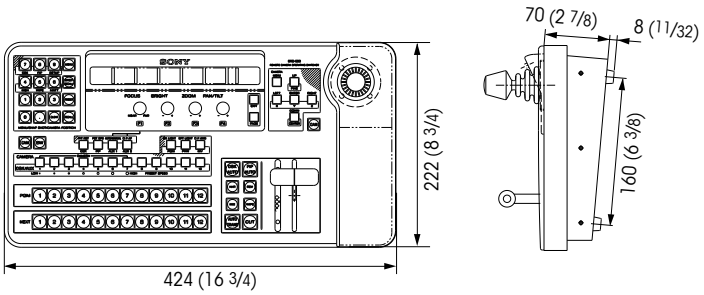
BOTTOM



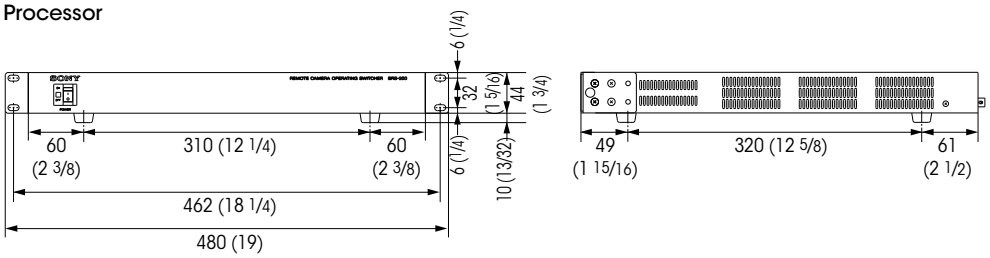
Units: mm (inches)

BRS-200

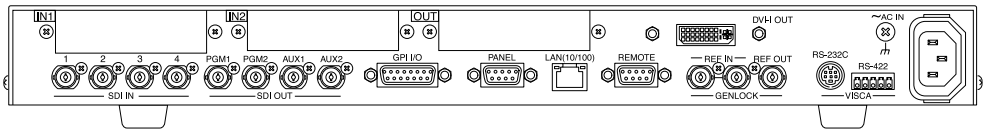
Control panel



Processor

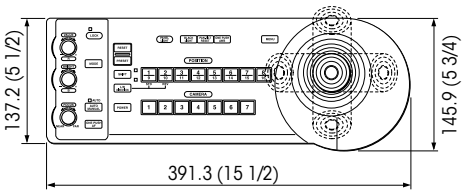


Rear

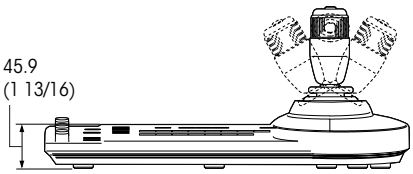


RM-BR300

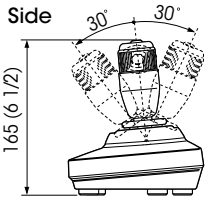
Top



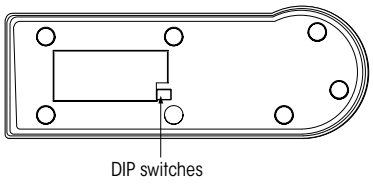
Front



Side

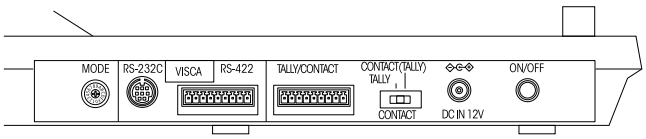


Bottom



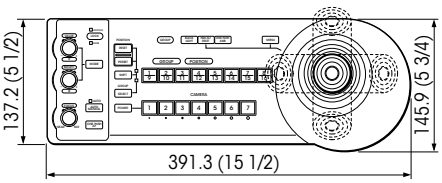
Units: mm (inches)

Rear

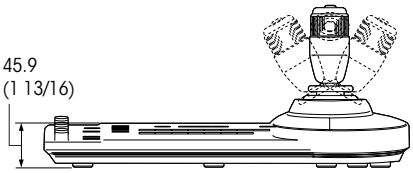


RM-IP10

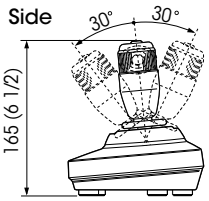
Top



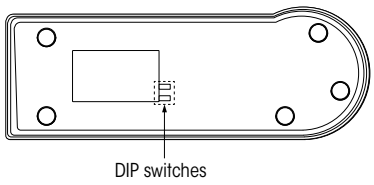
Front



Side

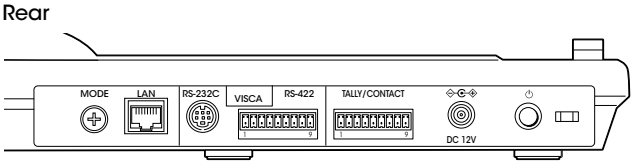


Bottom



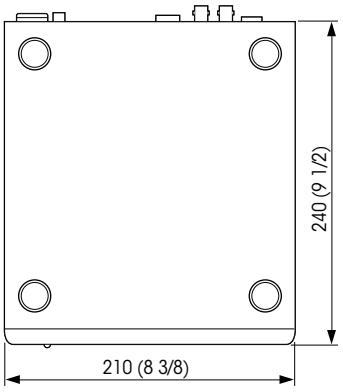
Units: mm (inches)

Rear

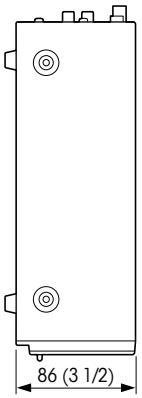


BRU-SF10

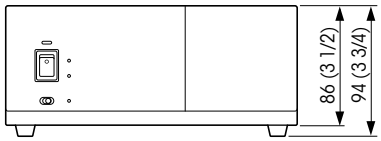
Top



Side



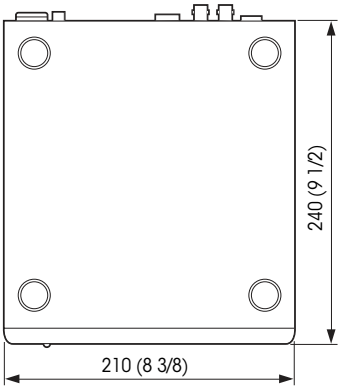
Front



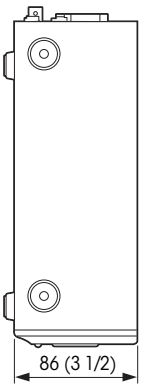
Units: mm (inches)

BRU-H700

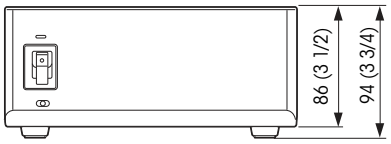
Top



Side



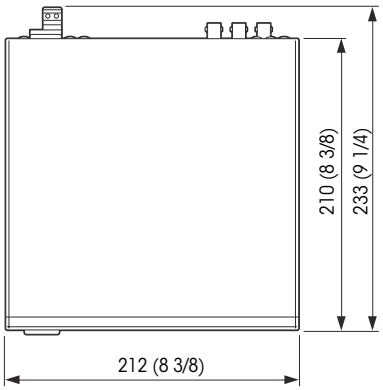
Front



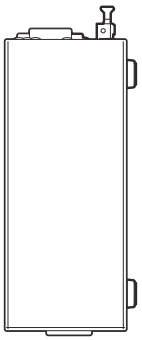
Units: mm (inches)

BRU-300/300P

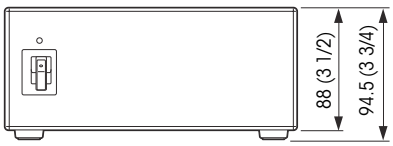
Top



Side

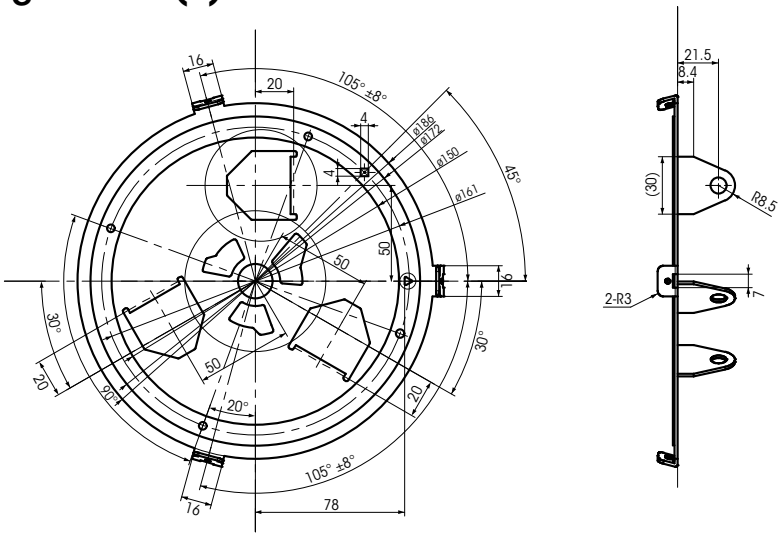


Front

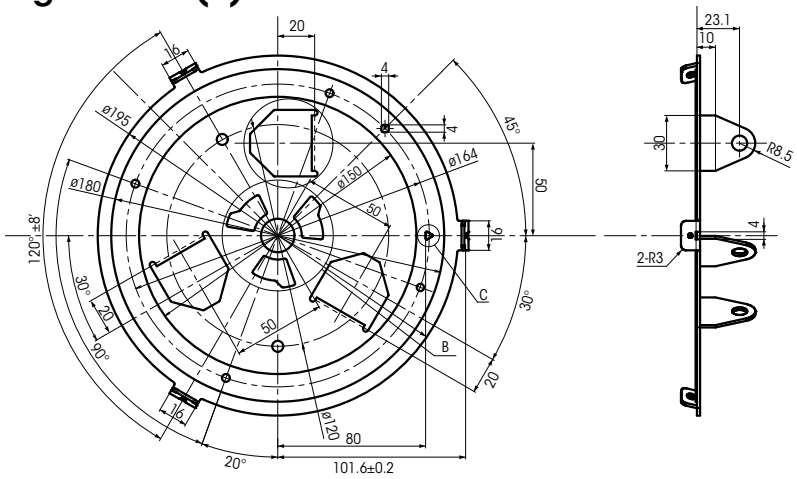


Units: mm (inches)

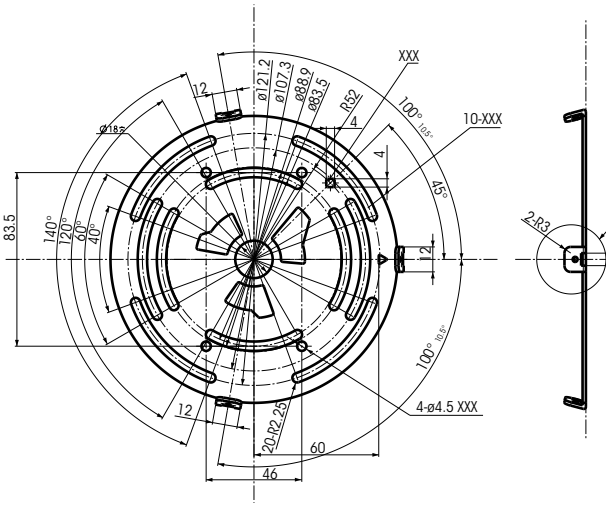
Ceiling Bracket (B) for BRC-H900 and BRC-Z700



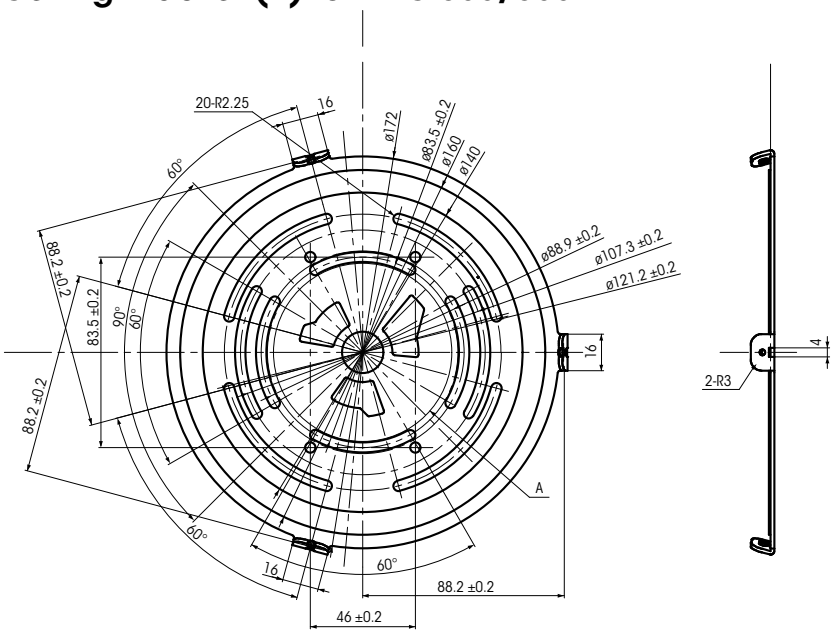
Ceiling Bracket (B) for BRC-H700



Ceiling Bracket (B) for BRC-Z330



Ceiling Bracket (B) for BRC-300/300P



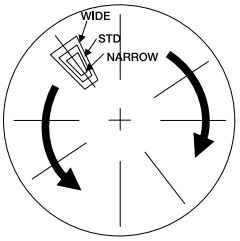
14 Techinical Appendix

14.1 Color Adjustment
(BRC-H900, BRC-Z700, BRC-Z330)

The BRC-H900, BRC-Z700 and BRC-Z330 can enhance or reduce a specific color region without changing the white balance. Both of these cameras adjust the saturation of six colors independently, and the BRC-H700 is able to modulate six colors simultaneously.

14.2 Color Detail
(BRC-H900, BRC-Z700, BRC-Z330)

The BRC-H900, BRC-Z700 and BRC-Z330 can adjust the image enhancer of a specific color, which is an enhancement over the conventional skin tone detail function. This allows you to adjust not only skin tone color but also all other colors.



14.3 Color AE
(BRC-H900, BRC-Z330)

The BRC-H900, BRC-Z330 is equipped with a Color AE function. This camera detects a particular color and adjusts exposure specifically for this color. This feature is useful when shooting objects located in front of a single-colored background.

14.4 KNEE/GAMMA Adjustment
(BRC-H900)

The BRC-H900 can adjustment "KNEE" and "GAMMA" on the camera menu.

14.5 Sync Lock Setting

In order to match output signal timing to the input signal, the Sync Master setting is required on the Main menu. To achieve this, select Menu, System, and then Sync Master.

BRC-H900

When HD output signal from BRC-H900 main unit [STD [HD]]
When SD output signal from BRC-H900 main unit [STD [SD]]

BRC-H700

Output signal to be matched with input signal
When using HFBK-HD1 [HD1]
When using HFBK-SD1 [SD1]
Output from main unit BRC-H700 [STD]

BRC-Z700

When HD output signal from BRC-Z700 main unit [STD [HD]]
When SD output signal from BRC-Z700 main unit [STD [SD]]
When connecting with BRU-H700
Output signal from BRU-H700 [STD [HD]]
When using HFBK-HD1 with BRU-H700 [HD1]
When using HFBK-SD1 with BRU-H700 [SD1]

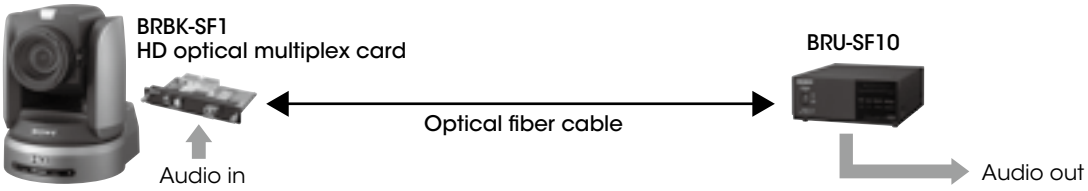
BRC-Z330

When HD output signal from BRC-Z330 main unit [STD [HD]]
When SD output signal from BRC-Z330 main unit [STD [SD]]

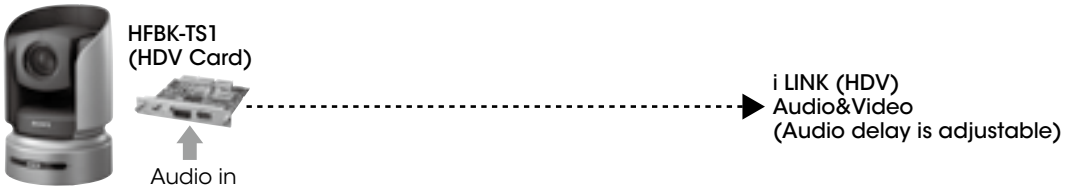
14.6 Audio Configuration

The BRC-H700 and BRC-Z700 have three and two audio configurations, respectively. In the first configuration with the HFBK-TS1 (illustrated below), you can mix audio signals and video signals and output them as HDV. In the second configuration, you can input the audio signal to the BRBK-H700 or the BRBK-MF1 and transmit it via an optical fiber cable. The output signal from the BRU-H700 is an analog audio signal and a selected video signal generated from a compatible optional video card. The third configuration adds even more convenience, allowing you to input the output signal to the HFBK-TS1. As a result, you can output the final data as HDV.

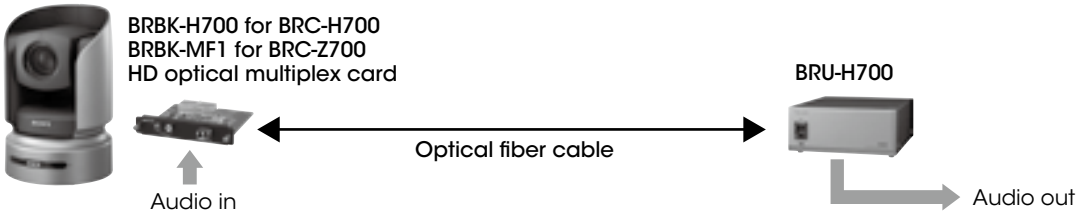
(1) The BRC-H900/ BRC-Z330



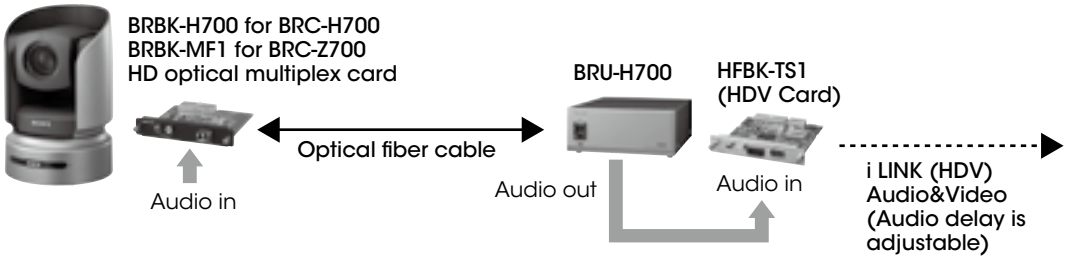
(2) The BRC-H700



(3) The BRC-H700/ BRC-Z700



(4) The BRC-H700/ BRC-Z700



14.7 Function priority

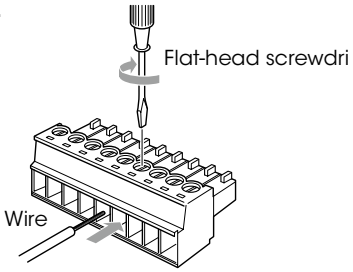
This table shows which setting takes priority over the other in each function when the BRC-H900/BRC-H700/BRC-Z700/BRC-Z330/BRC-300/300P is connected to the BRU-SF10/BRU-H700/BRU-300/300P.

	BRC cameras	BRU
RS-232C/RS-422 control	disable	enable
DATA MIX setting	disable	enable
VISCA ID setting	disable*	enable
VIDEO OUT	enable	enable

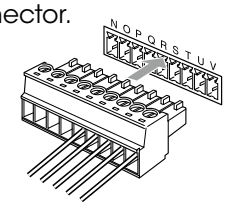
*The camera number setting at camera unit should be 0 (Auto).
To assign VISCA ID to each camera, please set it on BRU side.

14.8 Using the VISCA RS-422 Connector Plug

1 Insert a wire (AWG Nos. 28 to 18) into the desired wire opening on the VISCA RS-422 connector plug, and tighten the screw for that wire using a flathead screwdriver.

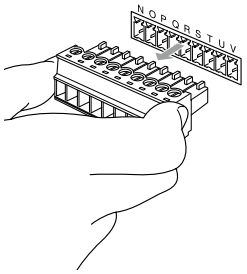


2 Insert the VISCA RS-422 connector plug into the VISCA RS-422 connector.



To remove the connector plug

Grasp both ends of the VISCA RS-422 connector plug and pull it out as shown in the illustration.

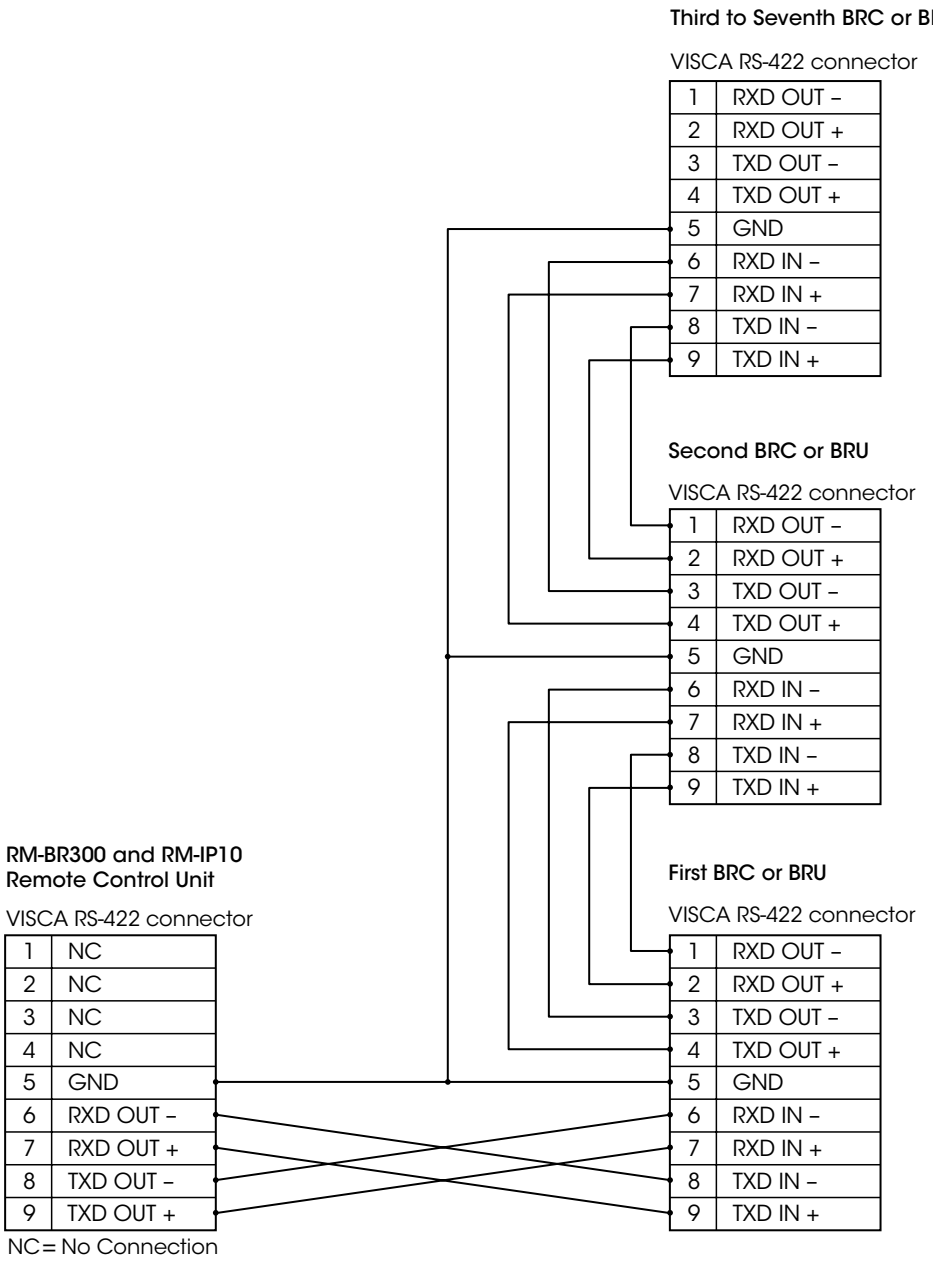


Note

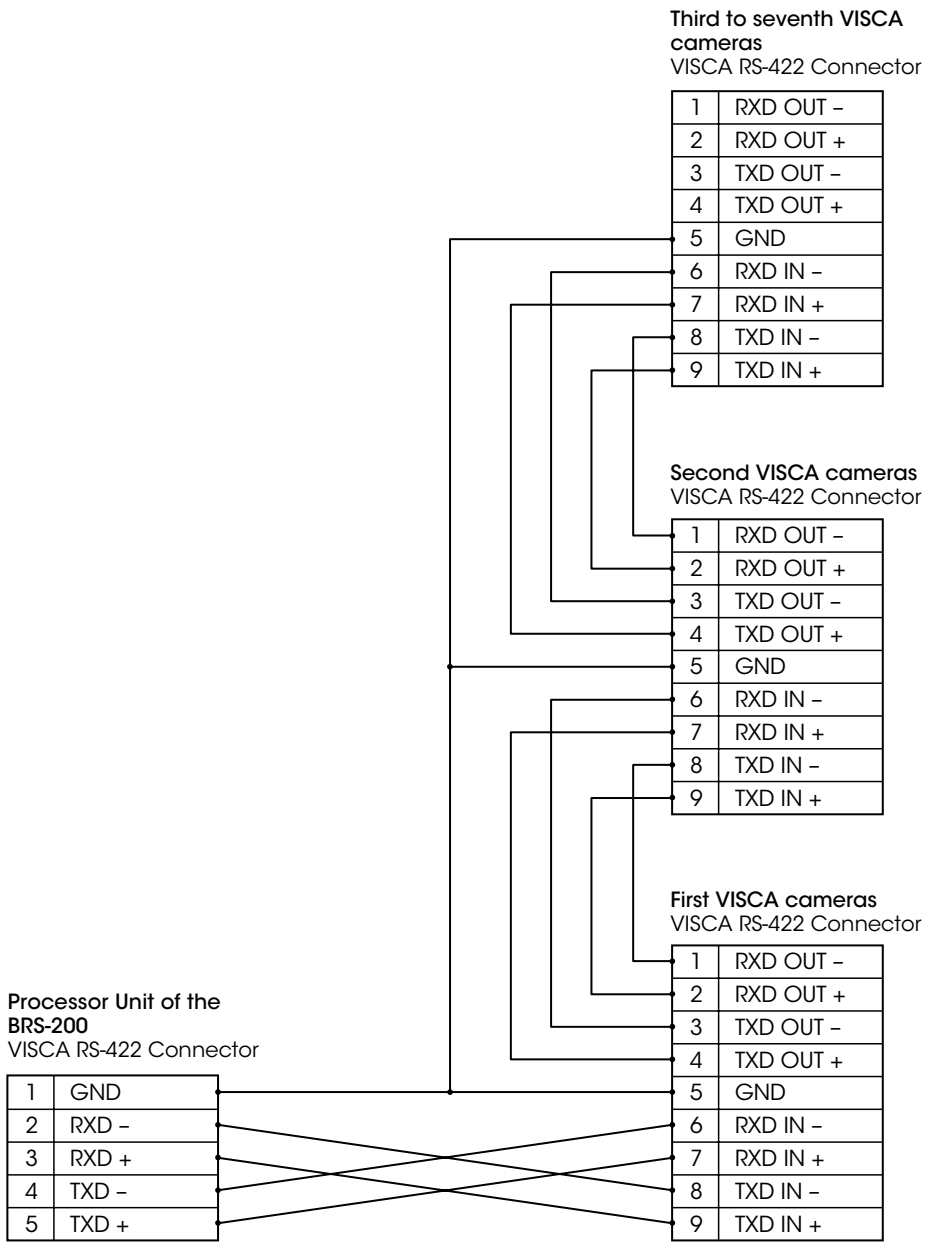
- In order to stabilize the voltage level of the signal, connect both ends to GND.
- When you make connections using VISCA RS-422 connectors, the VISCA RS-232C connection is not available.
- The maximum connection distance with VISCA RS-422 connection is approximately 1,200 m (3,937 ft).

14. 9 Wiring Diagram

14.9.1 Wiring Diagram of VISCA RS-422 Connection for the RM-BR300 and RM-IP10



14.9.2 Wiring Diagram of VISCA RS-422 Connection for the BRS-200



15 Installing the Camera in a High Position

Using the supplied ceiling brackets, wire rope and screws, and the attachment materials (not supplied), you can attach the camera to a ceiling or on a shelf, etc. in a high position. When you install the camera, always install it on a level ceiling or shelf, etc. If you have to install it on an incline, make sure that the inclination is within ± 15 degrees, so that the pan/tilt performance is guaranteed.

Caution
- When you attach the camera to a ceiling or shelf, etc. in a high position, entrust the installation to an experienced contractor or installer.
- Attach the camera to the ceiling or shelf, etc. firmly, after making sure the ceiling, shelf, etc. and the attachment materials (not including the supplied accessories) are strong enough to bear a weight of 60 kg (132 lb 4 oz). If the ceiling or shelf, etc. is not strong enough, the camera may fall and cause serious injury.
- Be sure to attach the supplied wire rope to prevent the camera from falling.
- Check periodically, at least once a year, to ensure that the connection has not loosened. If conditions warrant, make this periodic check more frequently.

Before installation

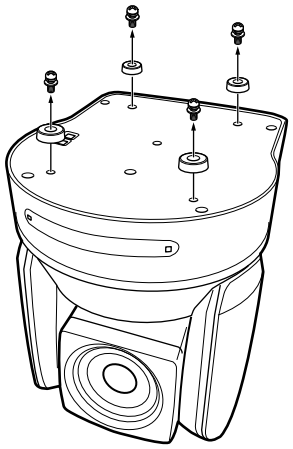
After deciding the shooting direction, make the required holes for the ceiling bracket (B) and connecting cables on the ceiling or shelf, etc. For the dimensions of the ceiling bracket (B), see page 42.

Note
- The connecting cables cannot be passed through the ceiling bracket (A). A hole for the wiring is required in the ceiling or on a shelf, etc. behind where the camera is to be installed.
- Do not attach any object other than the camera to the ceiling brackets.
- The ceiling bracket cannot be attached to the junction box when installing the camera on a ceiling.

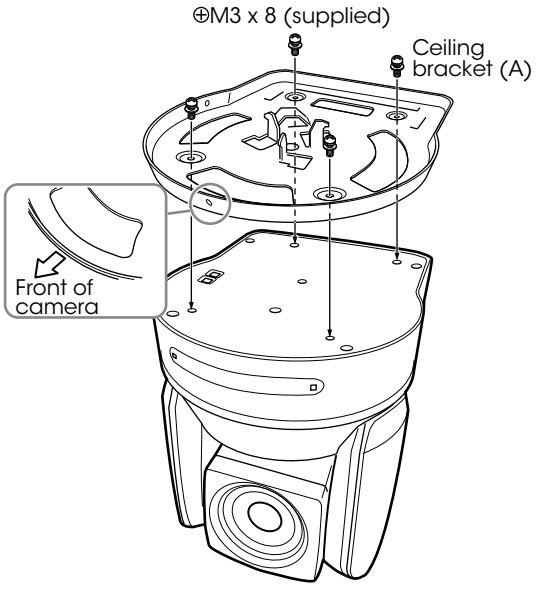
Installation on a ceiling (example)

1 Set IMG-FLIP to ON in the SYSTEM menu.

2 Remove the four screws on the bottom of the camera to remove the four feet.

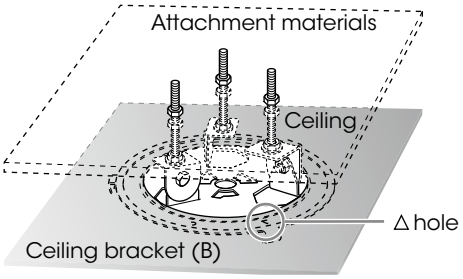


3 Attach the ceiling bracket (A) to the bottom of the camera using the supplied four screws (3M3 × 8). Position the a hole for screwing on the ceiling bracket (A) to the front of the camera as illustrated, align the screw holes on the ceiling bracket with those on the bottom of the camera, then attach the bracket to the camera.

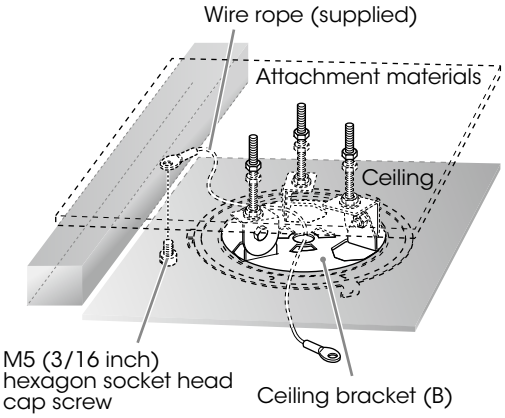


Note For attaching the camera to the ceiling bracket, use only the supplied screws. Using other screws may damage the camera.

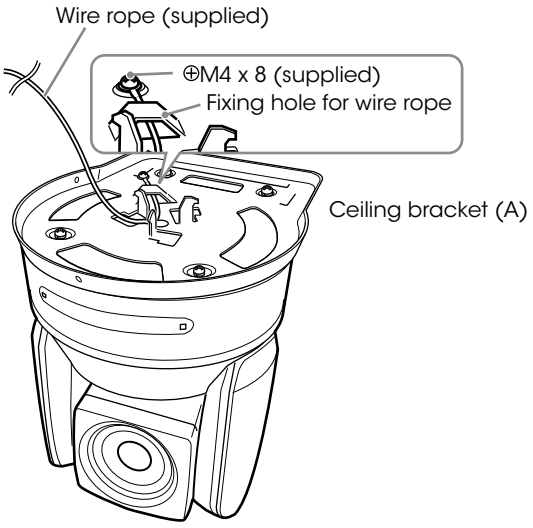
4 Attach the attachment materials (not supplied) to the ceiling bracket (B), and install the bracket on the ceiling. Align the hole on the ceiling bracket (B) in the direction where the front of the camera will be positioned later.



5 Attach the wire rope to the materials near the ceiling. Use an M5 (3/16 inch) hexagon socket head cap screw (not supplied). Attach the wire rope to an area independent of the area where the ceiling bracket is attached.

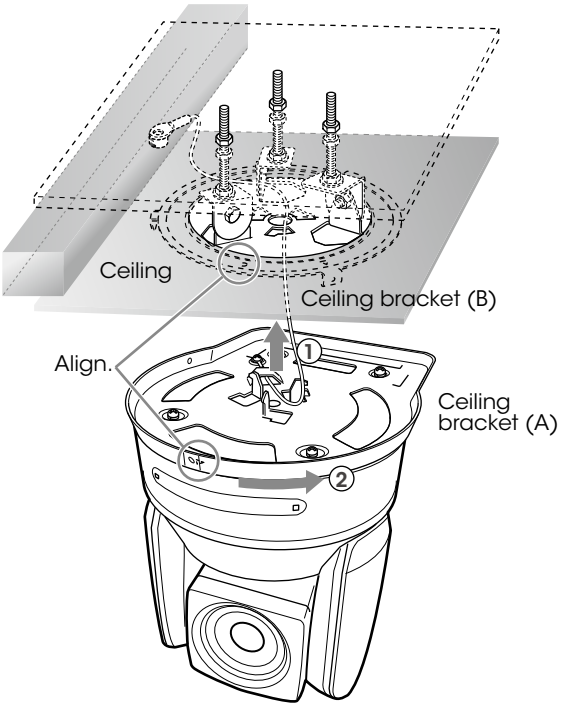


6 Attach the wire rope to the ceiling bracket (A). Pass the wire rope through the fixing hole and attach its end to the attachment hole on the bracket using the supplied one screw (3M4 × 8).

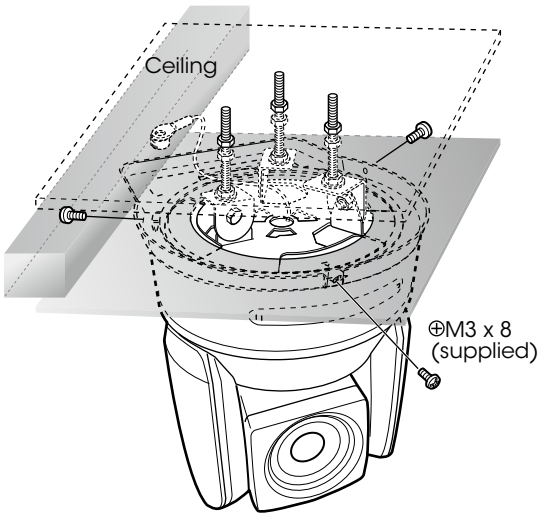


Caution For attaching the wire rope to the bracket, use only the supplied screw. Using another screw may disable the function of the wire rope.

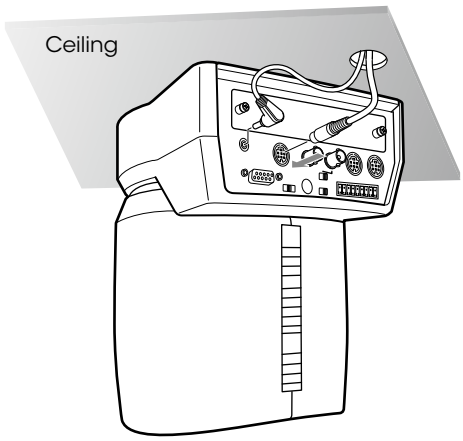
7 Insert the protrusions on the ceiling bracket (A) into the spaces prepared in the ceiling bracket (B) with the hole in the front of the ceiling bracket (A) aligned with the hole on the ceiling bracket (B), and temporarily attach them by turning the ceiling bracket (A) with the camera clockwise.



8 Secure the ceiling brackets (A) and (B) using the supplied three screws (3M3 × 8).



9 Connect the cables to the connectors on the rear of the camera.



Note Take the proper steps to ensure that the load of the cables connected does not cause problems.

10 The SONY and/or HD nameplates can be turned upside down, if necessary.

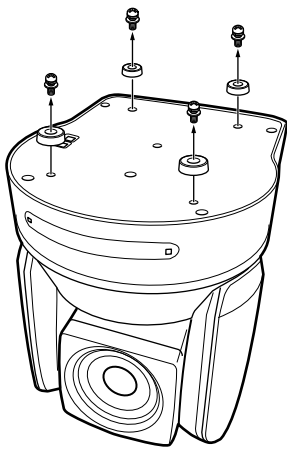
To remove the camera

1 Remove the three screws used to attach the camera in step 8 of "Installation on a ceiling (example)."

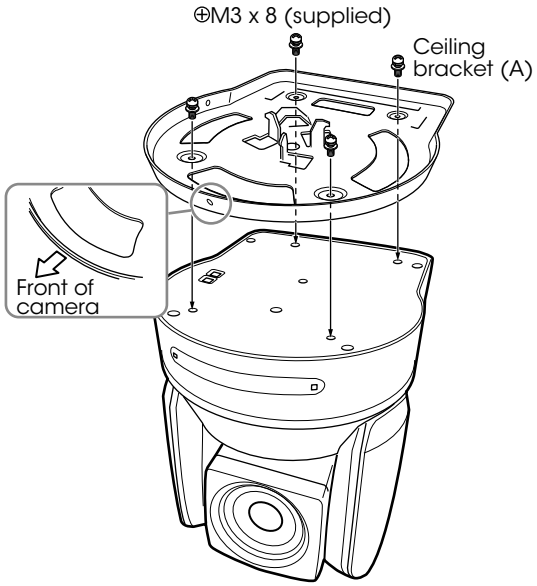
2 Turn the camera with the bracket counterclockwise to remove.

Installation on a shelf, etc. in a high position (example)

1 Remove the four screws on the bottom of the camera to remove the four feet.

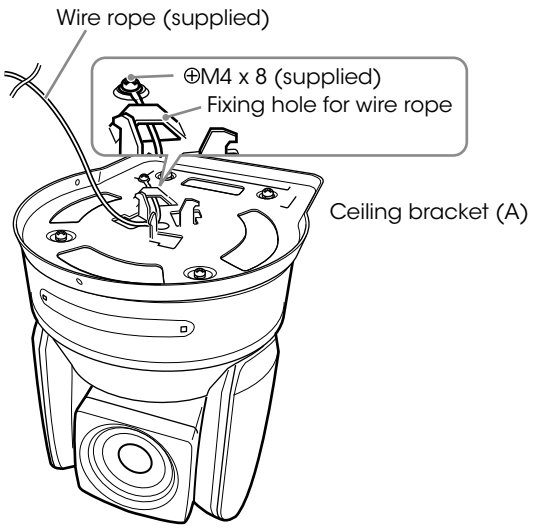


2 Attach the ceiling bracket (A) to the bottom of the camera using the supplied four screws (3M3 × 8). Position the hole for screwing on the ceiling bracket (A) to the front of the camera as illustrated, align the screw holes on the ceiling bracket with those on the bottom of the camera, then attach the bracket to the camera.



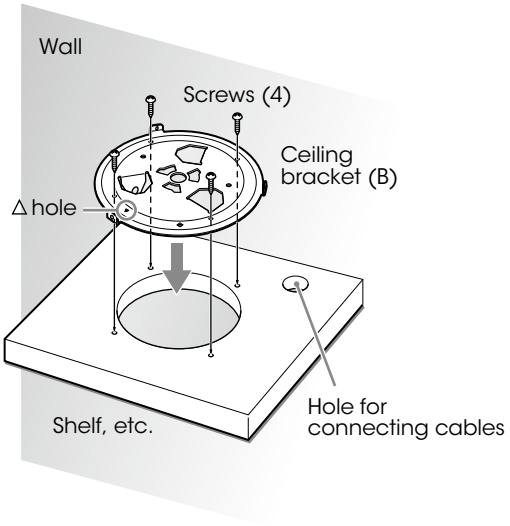
Note For attaching the camera to the ceiling bracket, use only the supplied screws. Using other screws may damage the camera.

3 Attach the supplied wire rope to the ceiling bracket (A). Pass the wire rope through the fixing hole and attach its end to the attachment hole on the bracket using the supplied one screw (3M4 × 8).

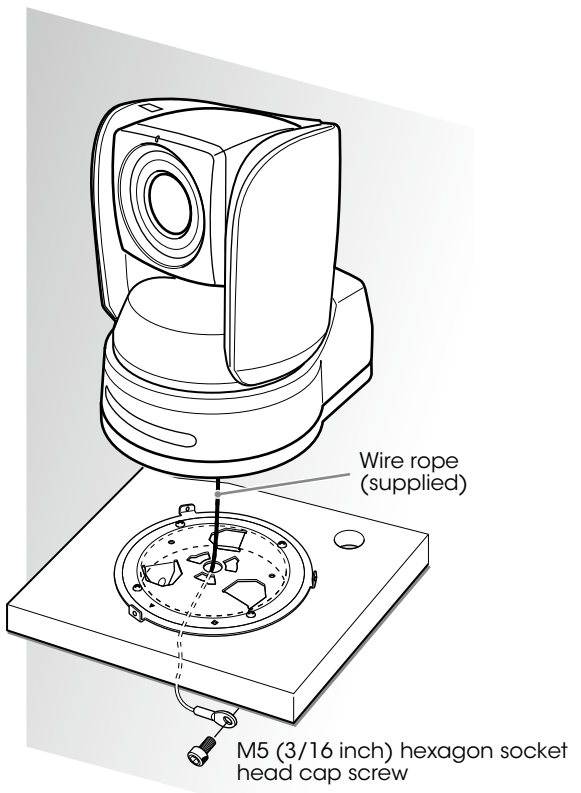


Caution For attaching the wire rope to the bracket, use only the supplied screw. Using another screw may disable the function of the wire rope.

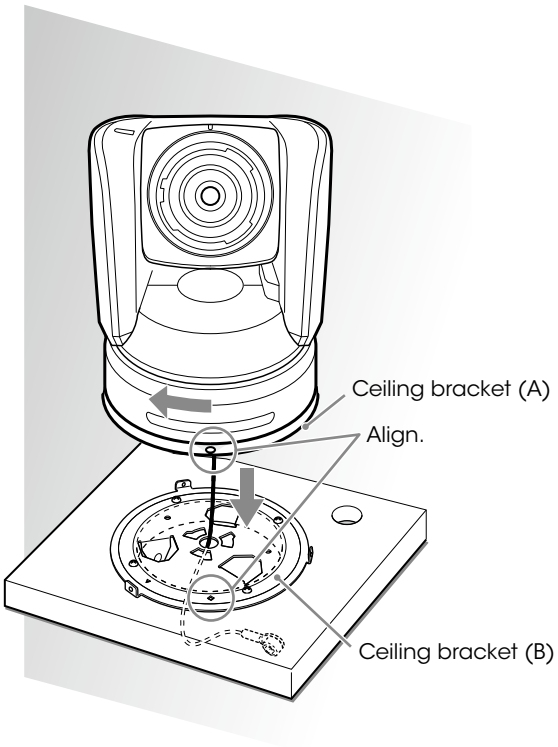
4 Attach the ceiling bracket (B) to a shelf, etc. on which the camera is to be installed. Use four screws (not supplied) appropriate for the materials of the shelf, etc. Align the hole on the ceiling bracket (B) in the direction where the front of the camera will be positioned later.



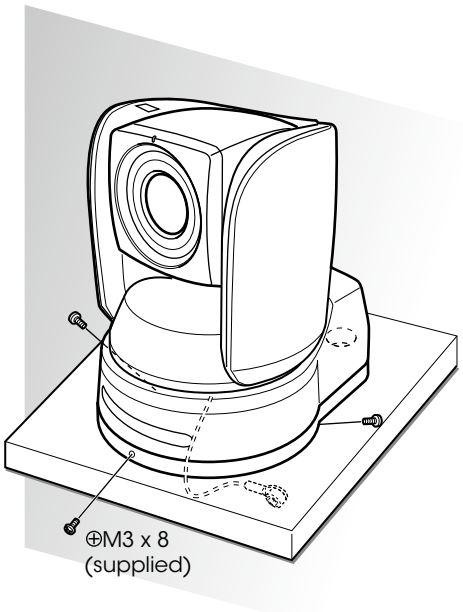
5 Attach the other end of the wire rope to the material near the shelf, etc. Use an M5 (3/16 inch) hexagon socket head cap screw (not supplied). Attach the wire rope to the material independent of the shelf, etc. where the ceiling bracket (B) is attached.



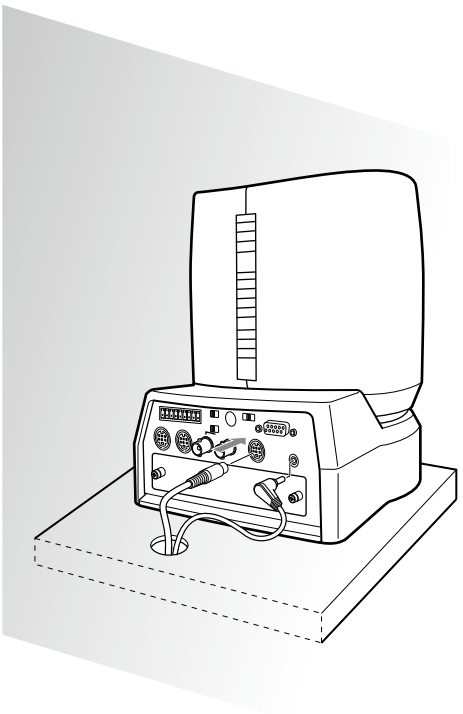
6 Insert the protrusions on the ceiling bracket (A) into the spaces prepared in the ceiling bracket (B) with the a hole in the front of the ceiling bracket (A) aligned with the hole on the ceiling bracket (B), and temporarily attach them by turning the ceiling bracket (A) with the camera counterclockwise.



7 Secure the ceiling brackets (A) and (B) using the supplied three screws (3M3 × 8).



8 Connect the cables to the connectors on the rear of the camera.



Note Take the proper steps to ensure that the load of the cables connected does not cause problems.

To remove the camera

1 Remove the three screws used to attach the camera in step 7 of "Installation on a shelf, etc. in a high position (example)."

2 Turn the camera with the bracket clockwise to remove.

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