A-E99-100-**14** (1)

SONY

HD Color Video Camera

Command List

Version 2.20

BRC-H900

Table of Contents

VISCA[1)] RS-232C/RS-422 Commands

Use of RS-232C/RS-422 control software based upon this command list may cause malfunction or damage to hardware and software. Sony Corporation is not liable for any such damage.

Overview of VISCA

In VISCA, the side outputting commands, for example, a computer, is called the controller, while the side receiving the commands, such as a BRC-H900, is called the peripheral device. The BRC-H900 serves as a peripheral device in VISCA. In VISCA, up to seven peripheral devices like the BRC-H900 can be connected to one controller using communication conforming to the RS-232C/RS-422 standard. The parameters of RS-232C/RS-422 are as follows.

- Communication speed: 9600 bps/38400 bps
- Data bits : 8
- Start bit : 1
- Stop bit : 1
- Non parity

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

Peripheral devices are connected in a daisy chain. As shown in Fig. 1, the actual internal connection is a one-direction ring, so that messages return to the controller via the peripheral devices. The devices on the network are assigned addresses.
The address of the controller is fixed at 0.
The addresses of peripheral devices are as follows.

When the camera address selector is set to 0 (automatic setting mode)*

The peripheral devices are assigned to the addresses, 1, 2, 3… in the connected order, starting from the one connected nearest to the controller. These addresses are set when the controller sends address commands during initialization of the network.

* The camera address is locked to 1 when the IP card is inserted.

When the camera address selector is set to 1 through 7 (manual setting mode)*

The addresses of the peripheral devices will be set to the pre-selected numbers. Within a single system, the same number can be used only once. If an address selector number other than 0 is used, set the camera address selectors on the connected BRC-H900 cameras to different numbers.

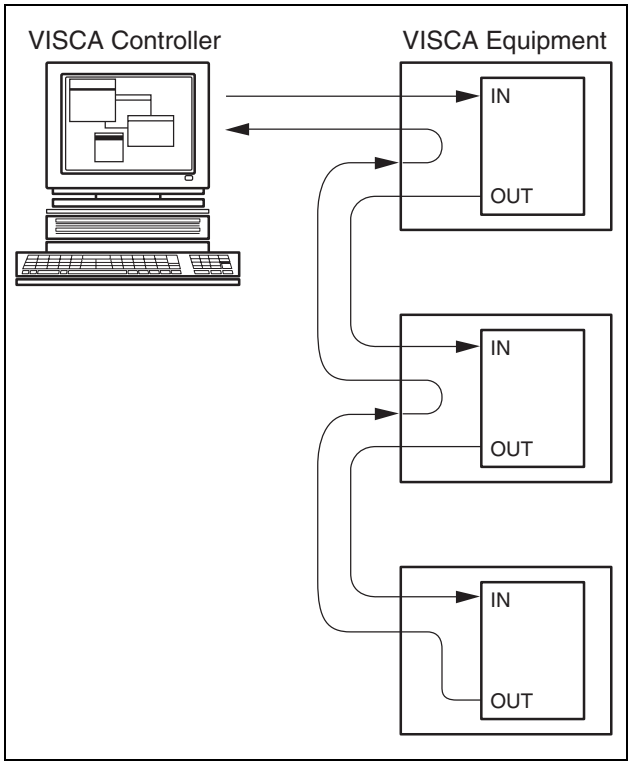
* The camera address is locked to 1 when the IP card is inserted.

Note

In the same network, all the camera address selectors should be set to “0” (automatic setting) or all the selectors should be manually set to “1” to “7”. Do not mix the automatic and manual settings.

Each VISCA equipment has VISCA IN and VISCA OUT connectors.
Set the DTR input (the S output of the controller) of VISCA IN to H when controlling VISCA equipment from the controller.

Fig. 1 VISCA network configuration



1) VISCA is a protocol developed by Sony for controlling a consumer’s camcorder. “VISCA” is a trademark of Sony Corporation.

VISCA Communication Specifications

VISCA packet structure

The basic unit of VISCA communication is called a packet (Fig. 2). The first byte of the packet is called the header and comprises the sender's and receiver's addresses. For example, the header of the packet sent to the BRC-H900 assigned address 1 from the controller (address 0) is 81H in hexadecimal. The packet sent to the BRC-H900 assigned address 2 is 82H. In the command list, as the header is 8X, input the address of the BRC-H900 to X. The header of the reply packet from the BRC-H900 assigned address 1 is 90H. The packet from the BRC-H900 assigned address 2 is A0H.
Some of the setting commands for BRC-H900 can be sent to all devices at one time (broadcast)*. In the case of broadcast, the header should be 88H in hexadecimal. When the terminator is FFH, it signifies the end of the packet.

* The broadcast function is not available for VISCA over IP.

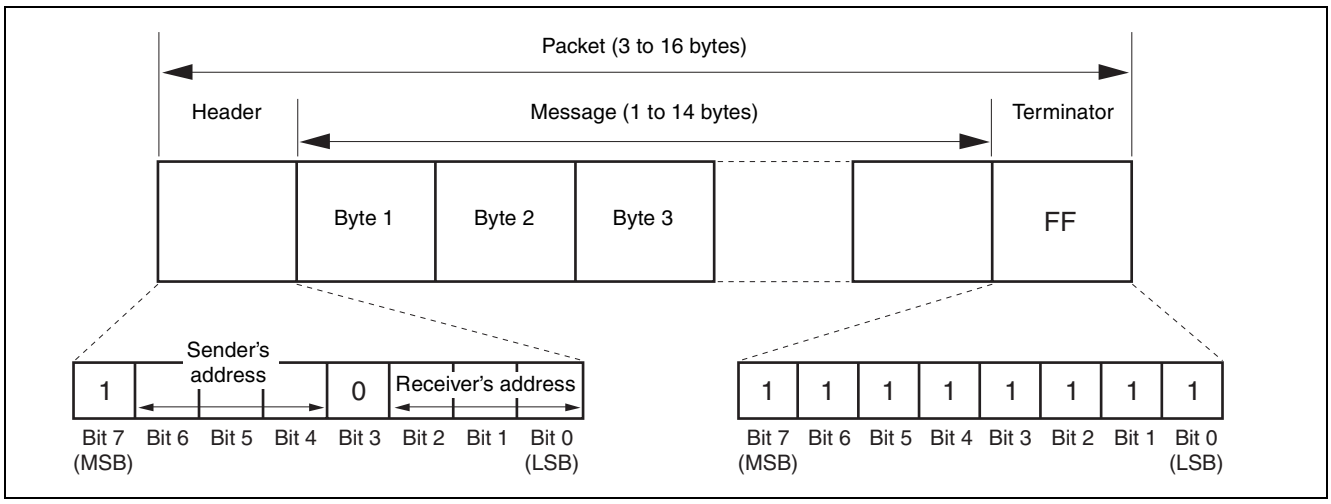


Fig. 2 Packet structure

Note

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

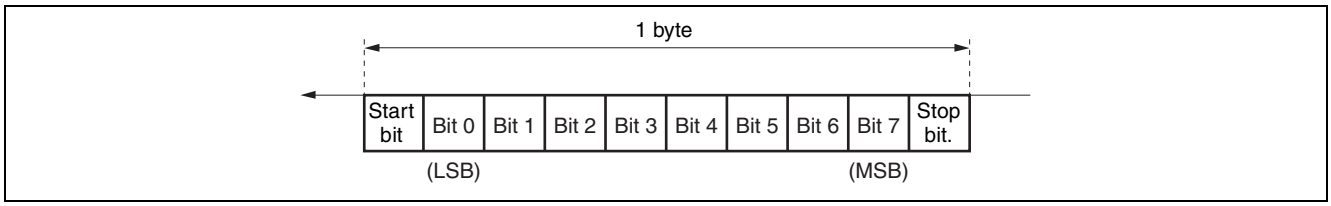
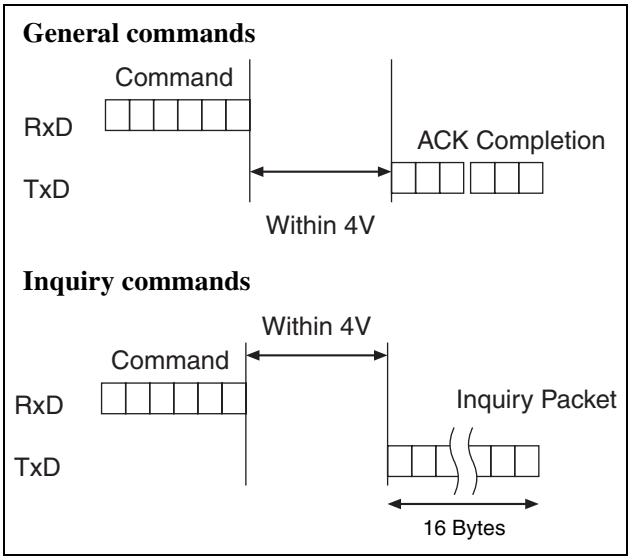


Fig. 3 Actual waveform for 1 byte.

Timing Chart

As VISCA command processing can only be carried out a maximum of one time in a Vertical (V*) cycle, it takes maximum 4V-cycle time for an ACK/Completion to be returned.
If the Command and ACK/Completion communication time is shorter than 1V-cycle time, a command can be received at every 1V cycle. From this point, if two or more commands are to be sent successively, wait for a reply command (an ACK or error message for a general command, and an inquiry packet for an inquiry command) of the previous command to be received before sending the next command.

*1V=16.7 msec (NTSC, 1080/59.94i, 720/59.94p), 20 msec (PAL, 1080/50i, 720/50p)



Command and inquiry

- **Command**
  Sends operational commands to the BRC-H900.

- **Inquiry**
  Used for inquiring about the current state of the BRC-H900.

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

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

X = 1 to 7: BRC-H900 address*

* Locked to "X = 1" for VISCA over IP.

For actual values to be sent, see Command Lists or Inquiry Command Lists.

Responses for commands and inquiries

- **ACK message**
  Returned by the BRC-H900 when it receives a command. No ACK message is returned for an inquiry.

- **Completion message**
  Returned by the BRC-H900 when execution of commands or inquiries is completed. In the case of inquiry commands, reply data for the inquiry is contained after the 3rd byte of the packet. If the ACK message is omitted, the socket number will contain 0.

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

X = 9 to F: BRC-H900 address + 8*

* Locked to "X = 9" for VISCA over IP.

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

Error Packet	Description
X0 6Y 01 FF	Message length error
X0 6Y 02 FF	Syntax Error
X0 6Y 03 FF	Command buffer full
X0 6Y 04 FF	Command canceled
X0 6Y 05 FF	No socket (to be canceled)
X0 6Y 41 FF	Command not executable

X = 9 to F: BRC-H900 address + 8, Y = socket number*

* Locked to "X = 9" for VISCA over IP.

Socket number

When command messages are sent to the BRC-H900, it is normal to send the next command message after receiving the completion message or error message. However, to deal with advanced uses, the BRC-H900 has two buffers (memories) for commands, so that up to two commands including the commands currently being executed can be received. (There is a wait longer than a 1V cycle between commands.) However, depending on the command, it may be necessary to wait until the first command is completed. When the BRC-H900 receives commands, it notifies the sender which command buffer was used, using the socket number of the ACK message. As the completion message or error message also has a socket number, it indicates which command has ended. Even when two command buffers are being used, a BRC-H900 management command and some inquiry messages can be executed.
The ACK message is not returned for these commands and inquiries, and only the completion message of socket number 0 is returned.

Command execution cancel

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

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

X = 1 to 7: BRC-H900 address, Y = socket number*

* Locked to "X = 1" for VISCA over IP.

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

Note

To cancel a command when VISCA PAN-TILT Drive (page 17) is being executed, wait at least 200 msec after executing. Then send a cancel command to ensure that PAN-TILT Drive stops effectively.
To execute a PAN-TILT Drive command again, wait at least 200 msec after the message "Command canceled" has appeared.

VISCA Device Setting Command

Before starting control of the BRC-H900, be sure to send the Address command and the IF_Clear command using the broadcast function.

For VISCA network administration

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

* Not available for VISCA over IP.

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

* Not available for VISCA over IP.

	Packet	Note
Address	88 30 01 FF	Always broadcasted.
Network Change	X0 38 FF	

X = 9 to F: BRC-H900 address + 8

VISCA interface command

- **IF_Clear**
  Clears the command buffers in the BRC-H900.
  When cleared, the operation currently being executed is not guaranteed.

	Command Packet	Reply Packet	Note
IF_Clear	8X 01 00 01 FF	X0 50 FF	
IF_Clear (broadcast)*1	88 01 00 01 FF	88 01 00 01 FF	

X = 1 to 7: BRC-H900 address (For inquiry packet)*2
X = 9 to F: BRC-H900 address +8 (For reply packet)*3

*1 The broadcast function is not available for VISCA over IP.
*2 Locked to "X = 1" for VISCA over IP.
*3 Locked to "X = 9" for VISCA over IP.

VISCA interface and inquiry

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

Inquiry	Inquiry Packet	Reply Packet	Description
CAM_VersionInq	8X 09 00 02 FF	Y0 50 GG GG HH HH JJ JJ KK FF	GGGG = Vender ID (0001: Sony) HHHH = Model ID 0501: BRC-H700 0502: BRU-H700 0505: BRC-Z700 0507: BRC-Z330 050B: BRC-H900 JJJJ = ROM revision KK = Maximum socket # (02)

X = 1 to 7: BRC-H900 address (For inquiry packet)*1
X = 9 to F: BRC-H900 address +8 (For reply packet)*2

*1 Locked to "X = 1" for VISCA over IP.
*2 Locked to "X = 9" for VISCA over IP.

VISCA Command/ACK Protocol

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

*1 Not available for VISCA over IP.

*2 When the camera address selector is set to an address other than 0, the value x in 88 30 0x FF will be variable.

Do not transmit the command (except Address Set, IF_Clear, Command Cancel, POWER (page 17)) when any menu is displayed on the screen. If displayed, clear the menu first using MENU Display OFF (page 18) Command, and then proceed.

VISCA Camera-Issued Messages

ACK/Completion Messages

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

z = Device address + 8 (Locked to "z = 9" for VISCA over IP.)

Error Messages

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

z = Device address + 8 (Locked to "z = 9" for VISCA over IP.)

Network Change Message*

Command	Command Message	Comments
Network Change	z0 38 FF	Issued when power is supplied to the camera.

* Not available for VISCA over IP.

VISCA over IP

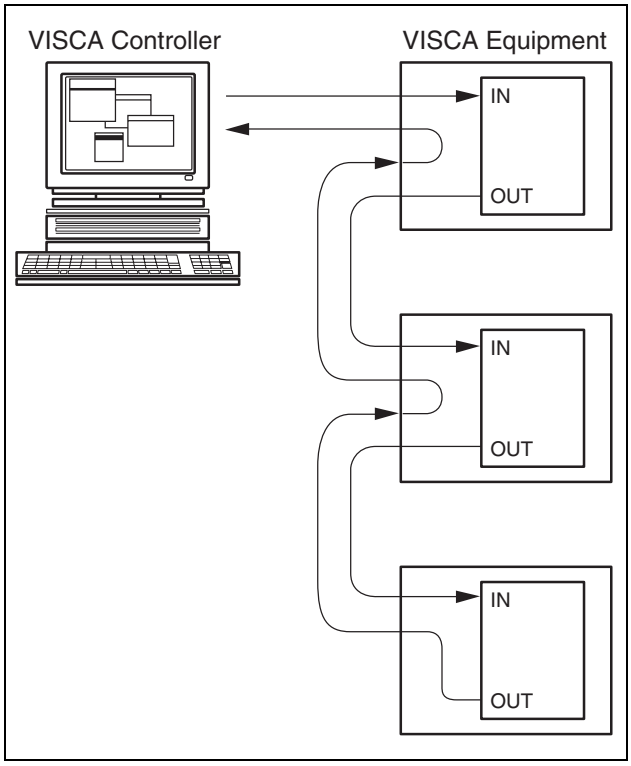
Overview of VISCA over IP

VISCA over IP allows you to control a BRC series camera that has an IP card inserted into its expansion slot by using VISCA. The controller on the LAN must be compatible with the IP communication function. You can connect up to 5 controllers simultaneously on the network.

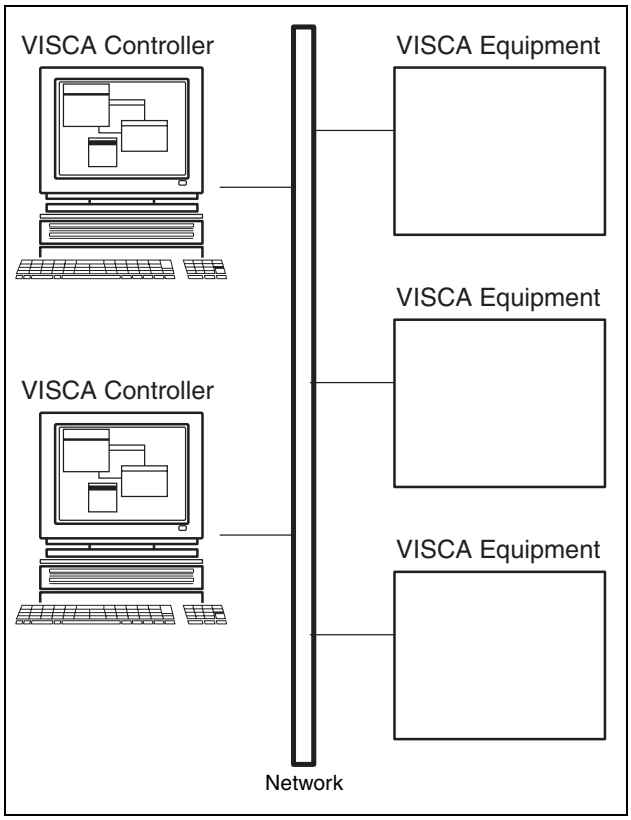
The communication specifications of VISCA over IP are as follows:

- **Interface**
  RJ-45 10Base-T/100Base-TX (automatically identifying)
- **Internet protocol**
  IPv4
- **Transport protocol**
  UDP
- **IP address**
  Set by the IP card setting command (page 40)
- **Port address**
  52381
- **Delivery confirmation/Retransmission control**
  Depends on the application

In these instructions, the device outputting commands, for example, a computer, is called the controller, and the device receiving the command, such as a BRC series camera, is called a peripheral device.
The controllers and peripheral devices are connected to a one-direction ring conforming to RS-232C/RS-422 standards. On the IP communication connection, the controllers and peripheral devices are connected by bus through a LAN.



RS232/RS422 connection



IP communication connection

While the IP communication connection, the address of each device cannot be set in the VISCA message as it is because the controllers and peripheral devices that are connected simultaneously are increased. In this case, addresses of the controllers and peripheral devices that are set in the VISCA message are locked to 0 (for the controller) or 1 (for the peripheral device).

Due to the nature of the IP communication, the use of some VISCA functions are limited. For details, see “IP Card Setting Command” on page 40.

For details of the IP address setting of the IP card that is inserted into the BRC camera, see “IP Card Setting Command” on page 40.

Communication method of VISCA over IP

Communication method

VISCA over IP can process the VISCA communication between the controllers and peripheral devices using the messages that can be identified on the LAN, and sends/receives them. Because of this, VISCA over IP is not concerned about the contents of the communication between the controllers and peripheral devices. However, the VISCA communication sequence is different, depending on the types, as follows.

VISCA command

This is a command from the controller to the peripheral device.
When the peripheral device receives this command, ACK is returned. After completing command processing, a completion notice is returned. This command uses the socket of VISCA. The order of completion notices may be changed if the multiple commands are sent to the same peripheral device.

VISCA inquiry

This is an inquiry from the controller to the peripheral device.
When the peripheral device receives this type of command, the reply for the inquiry is returned. This command does not use the socket of VISCA. The order of the replies is not changed if a multiple commands are sent.

VISCA reply

This is an ACK, completion notice, reply, or error reply from the peripheral device to the controller.
The classification for sending messages from the peripheral device to the controller is common.

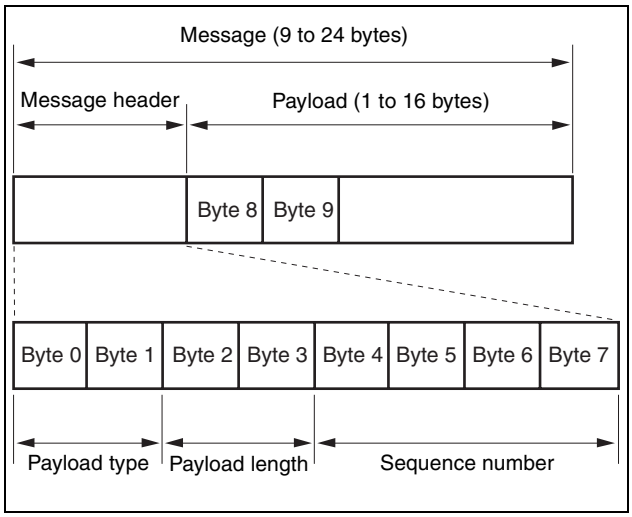
VISCA device setting command

This is the device setting command from the controller to the peripheral device as follows.

- **Address**
  Sets the address of the peripheral device, and does not return a reply to the controller. While using VISCA over IP, the address command is not sent from the controller because a Network Change command from the peripheral device that triggers sending command is not issued.
- **IF_Clear**
  Sends the reply message to the controller after clearing, without using VISCA socket.
- **CAM_VersionInq**
  Sends the reply message to the controller, without using VISCA socket.

Format

These are the specifications of the message header (8 bytes) and payload (1 to 16 bytes).



Message structure

Note

The actual LAN out method is big-endian, LSB first.

Payload type

Stores the value (Byte 0 and Byte 1) of the following table on the payload division.

Name	Value (Byte 0)	Value (Byte 1)	Description
VISCA command	0x01	0x00	Stores the VISCA command.
VISCA inquiry	0x01	0x10	Stores the VISCA inquiry.
VISCA reply	0x01	0x11	Stores the reply for the VISCA command and VISCA inquiry, or VISCA device setting command.
VISCA device setting command	0x01	0x20	Stores the VISCA device setting command.
Control command	0x02	0x00	Stores the control command.
Control reply	0x02	0x01	Stores the reply for the control command.

Payload length

Stores the number of bytes (1 to 16) of data is stored on the payload.

Example: When the payload length is 16 bytes.
Byte 2: 0x00
Byte 3: 0x10

Sequence number

The controller stores the sequence number that is added every time a message is sent. If the sequence number reaches the limit, next value will be 0. The peripheral device saves the sequence number in the message from the controller, and stores the sequence number of the received message corresponding to the message sent to the controller.

Payload

Depending on the payload type, the following are stored.

- **VISCA command**
  Stores the packet of the VISCA command.
- **VISCA inquiry**
  Stores the packet of VISCA message.
- **VISCA reply**
  Stores the reply for the command or inquiry (ACK message, completion message, or error message).
- **VISCA device setting command**
  Stores the packet of the VISCA device setting command.
- **Control command**
  The following are stored on the payload division of the control command.

Name	Value	Description
RESET	0x01	Resets the sequence number to 0. The value that was set as the sequence number is ignored.
ERROR	0x0Fyy	yy=01: Abnormality in the sequence number.
		yy=02: Abnormality in the message (message type)

- **Controlled reply**
  The following are stored on the payload division of the reply for the control command.

Message	Value	Description
ACK	0x01	Reply for RESET.

Delivery confirmation

VISCA over IP uses UDP as a communications protocol of the transport layer. Delivery of messages is not guaranteed for the UDP communication. Delivery confirmation and retransmission should be performed on the application.

Normally, when the controller sends a message to the peripheral device, the controller sends the new message after receiving the reply for the last message. You can confirm delivery of messages by managing the time-out waiting for a reply message sent.

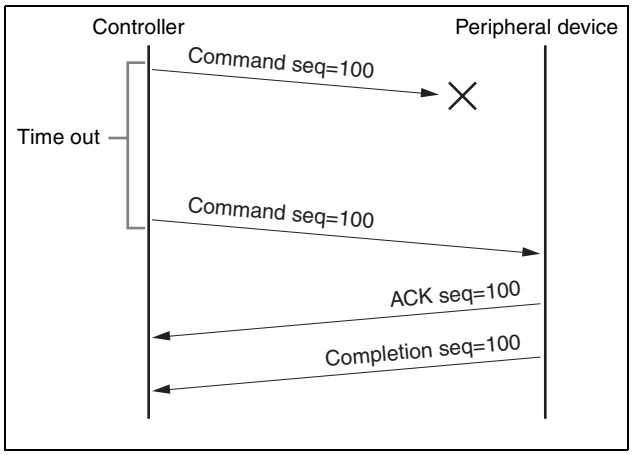
If time out occurs on the controller, loss of one of the following messages is considered:
- Command
- ACK message
- Completion message for the command
- Inquiry
- Reply message for the inquiry
- Error message
- Inquiry of the VISCA device setting command
- Reply message of the VISCA device setting command

If time out occurs on the controller, you can infer the lost message and state of the peripheral device by retransmitting the message using the same sequence number. The following table shows the received message and status by retransmission of the lost message, and the reference of correspondence after retransmission for each case. (Except for the case that a time out occurs for reasons other than loss of message.)

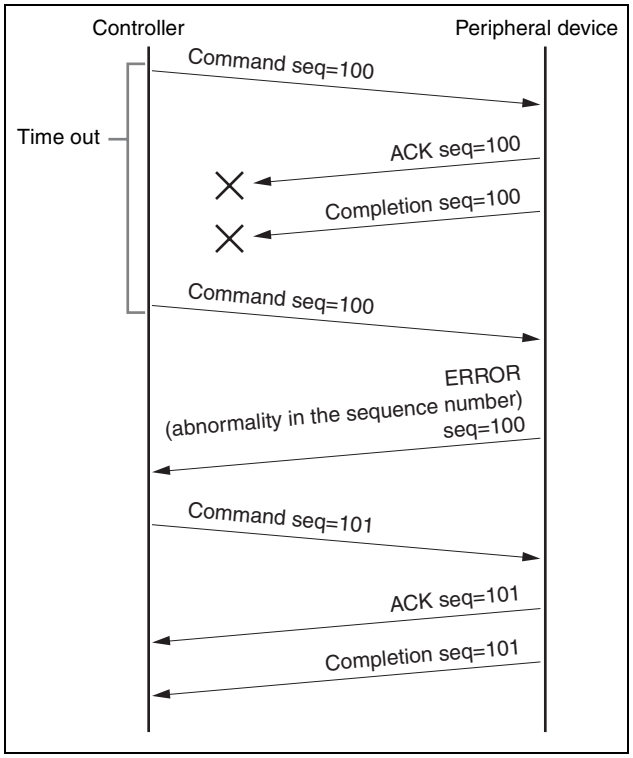
Lost message	Received message for retransmission	Status after retransmission	Correspondence after retransmission
Command	ACK message	Command is performed by retransmission.	Continue processing.
ACK message	ERROR (Abnormality in the sequence number.)	Command has been performed. If only the ACK message is lost, the completion message returns.	If the result by the completion message is needed, retransmit by updating the sequence number.
Completion message for the command	ERROR (Abnormality in the sequence number.)	Command has been performed.	If the result by the completion message is needed, retransmit by updating the sequence number.
Inquiry	Reply message	Inquiry is performed by retransmission.	Continue processing.
Reply message for the inquiry	ERROR (Abnormality in the sequence number.)	Inquiry has been performed.	If the result by the reply message is needed, retransmit by updating the sequence number.
Error message	Error message	Command is not performed. If the error cause eliminates, normal reply is returns (ACK, reply message).	Eliminate the error cause. If normal reply returns, continue processing.
Inquiry of the VISCA device setting command	Reply message of the VISCA device setting command	Inquiry has been performed by retransmission.	Continue processing.
Reply message of the VISCA device setting command	ERROR (Abnormality in the sequence number.)	Inquiry has been performed.	If the result by the reply message is needed, retransmit by updating the sequence number.

The BRC series camera has 2 buffers (memories) for the command to deal with advanced uses. When using VISCA over IP, up to 2 commands (including the current command) can be received. Depending on the message from the controller to the peripheral device, there are some messages that do not need to guarantee delivery. However, the peripheral device receives commands from multiple controllers while connected to VISCA over IP. If the multiple commands are send without waiting for the reply, the possibility of non-execution of the command and errors due to buffer overflow become high, because of limitations of order to receive commands or execution interval of command. It may cause efficiency to be reduced substantially.

Timing chart



Timing chart (loss of command)



Timing chart (loss of ACK or completion message)

Limitation

The following are limitations for VISCA over IP as compared with the VISCA specifications.

Locking the peripheral device's address of the VISCA message to 1

VISCA over IP cannot reflect each address to the address of the VISCA message because up to 112 peripheral devices and 5 controllers are connected. Because of this, the peripheral device's address of VISCA command is locked to 1 when using VISCA over IP. If the peripheral device's address is set to other than 1 for the VISCA command, the peripheral device works without hindrance since the peripheral device recognizes that its address is set to 1.

Locking the controller's address of the VISCA message to 0.

For the same reason as the peripheral device's address, the controller's address of VISCA command is locked to 0. If the controller's address is set to other than 0, the peripheral device works without hindrance, and the reply address from the peripheral device is always set to 0.

Prohibition of specifying the broadcast address for the VISCA message

Do not use the broadcast address because it requires the serial communication. Operations under the broadcast address is set to the command are not guaranteed.

Prohibition of the address for VISCA device setting command

Do not use this command because it requires the serial communication. Operations under the address command is sent are not guaranteed.

VIACA Network Change command is not supported

This cannot be issued because it requires the serial communication.

Expiration time for an on status of the tally lamp

The tally lamp is turned off if not receiving an on command from any controller for 15 seconds after receiving an on command of Cmd_Tally.

BRC-H900 Commands

BRC-H900 Command List (1/5)

Command Set	Command		Command Packet	Comments
EXPOSURE	MODE	FULL AUTO	8x 01 04 39 00 FF	
		MANUAL	8x 01 04 39 03 FF	
		SHUTTER Pri	8x 01 04 39 0A FF	
		IRIS Pri	8x 01 04 39 0B FF	
		BACK LIGHT	8x 01 04 33 02 FF	Available only when MODE is set to FULL AUTO.
		SPOT LIGHT	8x 01 04 3A 02 FF	
	IRIS	Reset	8x 01 04 0B 00 FF	When EXPOSURE MODE is set to MANUAL or IRIS Pri, the setting is F5.6.
		Up (OPEN)	8x 01 04 0B 02 FF	
		Down (CLOSE)	8x 01 04 0B 03 FF	
		Direct	8x 01 04 4B 00 00 0p 0q FF	pq: See the VISCA Command Setting Values (IRIS) section
	SHUTTER	Reset	8x 01 04 0A 00 FF	When EXPOSURE MODE is set to MANUAL or SHUTTER Pri, the setting is 1/60 (for 1080/59.94i, 720/59.94p). When EXPOSURE MODE is set to MANUAL or SHUTTER Pri, the setting is 1/50 (for 1080/50i, 720/50p).
		Up (HIGH)	8x 01 04 0A 02 FF	
		Down (LOW)	8x 01 04 0A 03 FF	
		Direct	8x 01 04 4A 00 00 0p 0q FF	pq: See the VISCA Command Setting Values (SHUTTER) section
	GAIN	Reset	8x 01 04 0C 00 FF	When EXPOSURE MODE is set to MANUAL, the setting is 0dB.
		Up	8x 01 04 0C 02 FF	
		Down	8x 01 04 0C 03 FF	
		Direct	8x 01 04 4C 00 00 0p 0q FF	pq: See the VISCA Command Setting Values (GAIN) section
	AE SPEED	Direct	8x 01 04 5D 0p FF	p 1: LOW 2: MID 3: HIGH
	AE LEVEL	Reset	8x 01 04 0E 00 FF	
		Up	8x 01 04 0E 02 FF	
		Down	8x 01 04 0E 03 FF	
		Direct	8x 01 04 4E 00 00 00 0p FF	p 5: -1.0 6: -0.5 7: 0 8: +0.5 9: +1.0
	AGC	ON/OFF	8x 01 7E 01 75 0p FF	p 2: ON 3: OFF
	AGC LIMIT	Direct	8x 01 04 2C 0p FF	p 0: 3dB 1: 6dB 2: 9dB 3: 12dB 4: 18dB
	AGC POINT	Direct	8x 01 7E 01 76 0p FF	p 0: F5.6 1: F4 2: F2.8
	AUTO SHUTTER	Direct	8x 01 7E 01 77 0p FF	p 2: ON 3: OFF
	SHUTTER LIMIT	Direct	8x 01 7E 01 78 0p FF	p 0: 1/100 1: 1/125 2: 1/250 3: 1/500
	SHUTTER POINT	Direct	8x 01 7E 01 79 0p FF	p 0: F5.6 1: F8 2: F11 3: F16

BRC-H900 Command List (2/5)

Command Set	Command		Command Packet	Comments
COLOR	WHITE BALANCE	-	8x 01 04 35 0p FF	p 0: AUTO 1: INDOOR 2: OUTDOOR 3: ONE PUSH 5: MANUAL
	One Push WB Trigger	-	8x 01 04 10 05 FF	
	R.GAIN	Reset	8x 01 04 03 00 FF	
		Up	8x 01 04 03 02 FF	
		Down	8x 01 04 03 03 FF	
		Direct	8x 01 04 43 00 00 0p 0q FF	pq: 00 (-128) - 80 (0) - FF (+127)
	B.GAIN	Reset	8x 01 04 04 00 FF	
		Up	8x 01 04 04 02 FF	
		Down	8x 01 04 04 03 FF	
		Direct	8x 01 04 44 00 00 0p 0q FF	pq: 00 (-128) - 80 (0) - FF (+127)
	SPEED	-	8x 01 04 56 0p FF	p: (Slow) 1, 2, 3, 4, 5 (Fast)
	OFFSET	Reset	8x 01 7E 01 2E 00 00 FF	
		Up	8x 01 7E 01 2E 00 02 FF	
		Down	8x 01 7E 01 2E 00 03 FF	
		Direct	8x 01 7E 01 2E 01 0p FF	p: 0 (-7) - 7 (0) - E (+7)
	MATRIX	-	8x 01 7E 01 3D 0p FF	p: 2 ON (STD) 3: OFF 4: ON (HIGH SAT) 5: ON (FL LIGHT)
	LEVEL	Reset	8x 01 04 09 00 FF	
		Up	8x 01 04 09 02 FF	
		Down	8x 01 04 09 03 FF	
		Direct	8x 01 04 49 00 00 00 0p FF	p: 0 (-7) - 7 (0) - E (+7)
	PHASE	Reset	8x 01 04 0F 00 FF	
		Up	8x 01 04 0F 02 FF	
		Down	8x 01 04 0F 03 FF	
		Direct	8x 01 04 4F 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	R-G	Direct	8x 01 7E 01 7A 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	R-B	Direct	8x 01 7E 01 7B 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	G-R	Direct	8x 01 7E 01 7C 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	G-B	Direct	8x 01 7E 01 7D 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	B-R	Direct	8x 01 7E 01 7E 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	B-G	Direct	8x 01 7E 01 7F 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
DETAIL	DETAIL	ON/OFF	8x 01 7E 01 60 0p FF	p 2: ON 3: OFF
	LEVEL	Reset	8x 01 04 02 00 FF	
		Up	8x 01 04 02 02 FF	
		Down	8x 01 04 02 03 FF	
		Direct	8x 01 04 42 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	FREQUENCY	Direct	8x 01 7E 01 61 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	CRISPENING	Direct	8x 01 7E 01 62 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	H/V RATIO	Direct	8x 01 7E 01 63 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	WHITE LIMITTER	Direct	8x 01 7E 01 64 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	BLACK LIMITTER	Direct	8x 01 7E 01 65 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	V DTL CREATION	-	8x 01 7E 01 66 0p FF	p: 0 NAM 1: G 2: G+R 3: Y
	KNEE APT LEVEL	Direct	8x 01 7E 01 67 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)

* Number in ( ) is MENU display values.

BRC-H900 Command List (3/5)

Command Set	Command		Command Packet	Comments
COLOR DETAIL	COLOR DETAIL	-	8x 01 7E 01 68 0p FF	p 2: ON 3: OFF
	LEVEL	Direct	8x 01 7E 01 69 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	AREA INDICATION	-	8x 01 7E 01 6A 0p FF	p 2: ON 3: OFF
	SATURATION	Direct	8x 01 7E 01 6B 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	PHASE	Direct	8x 01 7E 01 4D 00 0p 0q 0r FF	pqr: 000 - 167 (h)
	WIDTH	Direct	8x 01 7E 01 6C 0p 0q FF	pq: 00 (0) - 28 (40) - 5A (90)
KNEE	MODE	-	8x 01 7E 01 6D 0p FF	p 2: ON 3: OFF
	AUTO KNEE	-	8x 01 7E 01 54 0p FF	p 0: Auto 4: Off
	POINT	Direct	8x 01 7E 01 6E 0p 0q FF	pq: 32 (50) - 5A (90) - 6D (109)
	SLOPE	Direct	8x 01 7E 01 6F 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	KNEE SAT LEVEL	Direct	8x 01 7E 01 70 0p 0q FF	pq: 00 (00) - 32 (50) - 63 (+99)
GAMMA	MODE	-	8x 01 04 5B 0p FF	p: 0 STD3 1: CINEMA1 2: STD1 3: STD2 4: STD4 5: CINEMA2 6: CINEMA3 7: CINEMA4
	LEVEL	Direct	8x 01 7E 01 71 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	BLACK	Direct	8x 01 7E 01 73 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	BLACK GAMMA	Direct	8x 01 7E 01 72 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
FLICKER CANCEL	MODE	-	8x 01 04 32 0p FF	p 2: ON 3: OFF
	FREQUENCY	-	8x 01 7E 01 74 0p FF	0: 50Hz 1: 60Hz
FOCUS	MODE	ON/OFF	8x 01 04 38 0p FF	p 2: Auto 3: Manual
		Except ON/OFF	8x 01 04 38 10 FF	
	One Push AF Trigger	-	8x 01 04 18 01 FF	
	FOCUS ∞	-	8x 01 04 18 02 FF	
PAN TILT	PAN TILT Limit	Limit Set	8x 01 06 07 00 0W 0Yp 0Yq 0Yr 0Ys 0Yt 0Zp 0Zq 0Zr 0Zs FF	W: 1=UpRight 0=DownLeft Yp Yq Yr Ys Yt Zp Zq Zr Zs: See Pan/Tilt Position (for reference) in the VISCA Command Setting Values section
		Limit Clear	8x 01 06 07 01 0W 07 0F 0F 0F 0F 07 0F 0F 0F FF	
	RAMP CURVE	-	8x 01 06 31 0p FF	p: 2 MODE1 3 MODE2
SYSTEM	IR RECEIVE	-	8x 01 06 08 pq FF	pq: 02 ON 03 OFF 10 ON/OFF Toggle movement
	IMG FLIP	-	8x 01 04 66 0p FF	p: 2 ON 3: OFF
	RAN REVERSE	-	8x 01 7E 01 06 00 0p FF	p: 1 ON 0: OFF
	TILT REVERSE	-	8x 01 7E 01 09 00 0p FF	p: 1 ON 0: OFF
	DISPLAY INFO	-	8x 01 7E 01 18 0p FF	p: 2 ON 3: OFF
	SYNC MASTER	-	8x 01 7E 01 2C 0p FF	p: 0 HD 3: SD
	HPHASE	Up	8x 01 7E 01 3E 00 02 FF	
		Down	8x 01 7E 01 3E 00 03 FF	
		Direct	8x 01 7E 01 5B 00 0p 0q 0r FF	pqr: 000 - 3BF
	STEADY SHOT	-	8x 01 04 34 pq FF	p: 2 ON 3: OFF
	COLOR BAR	-	8x 01 04 7D 0p FF	p: 2 ON 3: OFF
	TALLY MODE	-	8x 01 7E 01 0A 01 0q FF	q: 0 OFF 4: ON (LOW) 5: ON (HIGH)

BRC-H900 Command List (4/5)

Command Set	Command		Command Packet	Comments
VIDEO OUT	D-SUB 15 FORMAT	-	8x 01 7E 01 03 00 0p FF	p: 0 RGB 1: YPbPr
	ADD SYNC(RGB)	-	8x 01 7E 01 07 00 0p FF	p: 0 RGB SYNC OFF 2: RGB SYNCON
	SYNC TYPE	-	8x 01 7E 01 1A 00 0p FF	p: 0 3-state SYNC 1: VD
	IMG SIZE	-	8x 01 7E 01 3C 0p FF	p: 0 4: 3 [SQUEEZE] 1 16: 9 [LETTER] 2 4: 3 [CROP]
	SETUP	-	8x 01 7E 01 3F 0p FF	p: 0 ON (7.5IRE) 1: OFF (0IRE)
POWER	ON/OFF	-	8x 01 04 00 0p FF	p: 2 ON 3: OFF
PRESET Drive Speed	-	-	8x 01 7E 01 0B 0p qq FF	p: Preset number of speed setting -1 (0-F) qq: p position direction speed 01-18 (h)
TALLY	ON/OFF	-	8x 01 7E 01 0A 00 0p FF	
PAN-TILT Drive	Up	-	8x 01 06 01 VV WW 03 01 FF	VV: PAN speed 00-18 (h) WW: TILT speed 00-18 (h)
	Down	-	8x 01 06 01 VV WW 03 02 FF	
	Left	-	8x 01 06 01 VV WW 01 03 FF	
	Right	-	8x 01 06 01 VV WW 02 03 FF	
	UpLeft	-	8x 01 06 01 VV WW 01 01 FF	
	UpRight	-	8x 01 06 01 VV WW 02 01 FF	
	DownLeft	-	8x 01 06 01 VV WW 01 02 FF	
	DownRight	-	8x 01 06 01 VV WW 02 02 FF	
	Stop	-	8x 01 06 01 VV WW 03 03 FF	
	ABS (Absolute Position)	-	8x 01 06 02 VV 00 0Yp 0Yq 0Yr 0Ys 0Yt 0Zp 0Zq 0Zr 0Zs FF	VV: Speed 00-18 (h)
	REL (Relative Position)	-	8x 01 06 03 VV 00 0Yp 0Yq 0Yr 0Ys 0Yt 0Zp 0Zq 0Zr 0Zs FF	Yp Yq Yr Ys Yt Zp Zq Zr Zs: See Pan/Tilt Position (for reference) in the VISCA Command Setting Values section
	Home	-	8x 01 06 04 FF	
	Reset	-	8x 01 06 05 FF	
CAMERA ID Setting	-	-	8x 01 04 22 0p 0q 0r 0s FF	pqrs: 0000 - FFFF
TITLE Display (Preset Position)	Title Set1	-	8x 01 7E 01 14 uu vv 0w 0! 00 00 00 00 00 00 00 FF	uu: Character start position display, H position 00-1A vv: Character start position display, V position 00-0D w: Blinking character display 1 ON, 0 OFF !: Preset number of character display -1 0-F
	Title Set2	-	8x 01 7E 01 15 0! aa bb cc dd ee ff gg hh ii jj FF	!: Preset number of character display -1 0-F aa bb cc dd ee ff gg hh ii jj: First 10 characters setting (ASCII CODE 0x20-0x7E)
	Title Set3	-	8x 01 7E 01 16 0! kk ll mm nn oo pp qq rr ss tt FF	!: Preset number of character display -1 0-F kk ll mm nn oo pp qq rr ss tt: Last 10 characters setting (ASCII CODE 0x20-0x7E)
	Title Clear	-	8x 01 7E 01 17 0! 00 FF	!: Preset number of character display -1 0-F
	Title On	-	8x 01 7E 01 17 02 FF	
	Title Off	-	8x 01 7E 01 17 03 FF	

BRC-H900 Command List (5/5)

Command Set	Command		Command Packet	Comments
TITLE Display (Standard)	Title Set1	-	8x 01 7E 01 10 uu vv 0w 00 00 00 00 00 00 FF	uu: Character start position display, H position 00-1A vv: Character start position display, V position 00-0D w: Blinking character display 1 ON, 0 OFF
	Title Set2	-	8x 01 7E 01 11 aa bb cc dd ee ff gg hh ii jj FF	aa bb cc dd ee ff gg hh ii jj: First 10 characters setting (ASCII CODE 0x20-0x7E)
	Title Set3	-	8x 01 7E 01 12 kk ll mm nn oo pp qq rr ss tt FF	kk ll mm nn oo pp qq rr ss tt: Last 10 characters setting (ASCII CODE 0x20-0x7E)
	Title Clear	-	8x 01 7E 01 13 00 FF	
	Title On	-	8x 01 7E 01 13 02 FF	
	Title Off	-	8x 01 7E 01 13 03 FF	
MENU Display OFF	-	-	8x 01 06 06 03 FF	
PRESET	Set	-	8x 01 04 3F 00 0p FF	
	Reset	-	8x 01 04 3F 01 0p FF	
	Recall	-	8x 01 04 3F 02 0p FF	p: Preset number -1 0-F
Zoom	Stop	-	8x 01 04 07 00 FF	
	Tele (Standard Speed)	-	8x 01 04 07 02 FF	
	Wide (Standard Speed)	-	8x 01 04 07 03 FF	
	Tele (Variable Speed)	-	8x 01 04 07 2p FF	p: 0 (Slow) to 7 (Fast)
	Wide (Variable Speed)	-	8x 01 04 07 3p FF	
	Direct	-	8x 01 04 47 0p 0q 0r 0s FF	pqrs: See the VISCA Command Setting Values (ZOOM) section
FOCUS	Stop	-	8x 01 04 08 00 FF	
	Far (Standard Speed)	-	8x 01 04 08 02 FF	
	Near (Standard Speed)	-	8x 01 04 08 03 FF	
	Far (Variable Speed)	-	8x 01 04 08 2p FF	p: 0 (Slow) to 7 (Fast)
	Near (Variable Speed)	-	8x 01 04 08 3p FF	
	Direct	-	8x 01 04 48 0p 0q 0r 0s FF	pqrs: See the VISCA Command Setting Values (FOCUS) section

BRBK-SA1 Command

D-SUB 9Pin OUT1	-	8x 01 7E 01 24 0p 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 RGB 1 YCbCr
D-SUB 9Pin OUT2	-	8x 01 7E 01 25 0p 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 Y/C 1 VBS
RGB SYNC	-	8x 01 7E 01 26 0p 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 2 SYNC OFF 3 SYNC ON RGB
IMG SIZE	-	8x 01 7E 01 27 0p 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 4: 3 [SQUEEZE] 1 16: 9 [LETTER] 2 4: 3 [CROP]
SETUP	-	8x 01 7E 01 3B 0p 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 ON (7.5IRE) 1 OFF (0IRE)

BRBK-HSD2 Command

IMG SIZE	-	8x 01 7E 01 43 0p 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 4: 3 [SQUEEZE] 1 16: 9 [LETTER] 2 4: 3 [CROP]

BRBK-IP10 Command*

Command Set	Command	Command Packet	Comments
Image Size**	4:3 [Squeeze]	8x 01 7E 01 08 00 00 FF	
	16:9 [Letter]	8x 01 7E 01 08 00 01 FF	
	4:3 [Crop]	8x 01 7E 01 08 00 02 FF	

* Available only when using SD-SDI mode.
** The Image Size setting and the IMG SIZE setting on the camera's VIDEO OUT menu are the same.

BRC-H900 Inquiry Command List (1/3)

Inquiry Command			Command Packet	Inquiry Packet	Comments
EXPOSURE	MODE	FULL AUTO IRIS Pri SHUTTER Pri MANUAL Inquiry	8x 09 04 39 FF	y0 50 0p FF	p: 0 FULL AUTO 3 MANUAL A SHUTTER Pri B IRIS Pri
		BACK LIGHT ON/ OFF Inquiry	8x 09 04 33 FF	y0 50 0p FF	p: 2 ON 3: OFF
		SPOT LIGHT ON/ OFF Inquiry	8x 09 04 3A FF	y0 50 0p FF	p: 2 ON 3: OFF
	IRIS	-	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: See the VISCA Command Setting Values (IRIS) section
	SHUTTER	-	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: See the VISCA Command Setting Values (SHUTTER) section
	GAIN	-	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: See the VISCA Command Setting Values (GAIN) section
	AE SPEED	-	8x 09 04 5D FF	y0 50 0p FF	p 1: LOW 2: MID 3: HIGH
	AE LEVEL	-	8x 09 04 4E FF	y0 50 00 00 00 0p FF	p 5: -1.0 6: -0.5 7: 0 8: +0.5 9: +1.0
	AGC	ON/OFF Inquiry	8x 09 7E 01 75 FF	y0 50 0p FF	p: 2 ON 3: OFF
	AGC LIMIT	-	8x 09 04 2C 0p FF	y0 50 0p FF	p 0: 3dB 1: 6dB 2: 9dB 3: 12dB 4: 18dB
	AGC POINT	-	8x 09 7E 01 76 FF	y0 50 0p FF	p 0: F5.6 1: F4 2: F2.8
	AUTO SHUTTER	-	8x 09 7E 01 77 FF	y0 50 0p FF	p 2: ON 3: OFF
	SHUTTER LIMIT	-	8x 09 7E 01 78 FF	y0 50 0p FF	p 0: 1/100 1: 1/125 2: 1/250 3: 1/500
	SHUTTER POINT	-	8x 09 7E 01 79 FF	y0 50 0p FF	p 0: F5.6 1: F8 2: F11 3: F16
COLOR	WHITE BALANCE	MODE Inquiry	8x 09 04 35 FF	y0 50 0p FF	
	R.GAIN	-	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	
	B.GAIN	-	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	
	SPEED	-	8x 09 04 56 FF	y0 50 0p FF	
	OFFSET	-	8x 09 7E 01 2E FF	y0 50 00 00 00 0p FF	p: 0 (-7) - 7 (0) - E (+7)
	MATRIX	-	8x 09 7E 01 3D FF	y0 50 0p FF	
	LEVEL	-	8x 09 04 49 FF	y0 50 00 00 00 0p FF	p: 0 (-7) - 7 (0) - E (+7)
	PHASE	-	8x 09 04 4F FF	y0 50 00 00 00 0p FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	R-G	-	8x 09 7E 01 7A FF	y0 50 00 00 00 0p FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	R-B	-	8x 09 7E 01 7B FF	y0 50 00 00 00 0p FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	G-R	-	8x 09 7E 01 7C FF	y0 50 00 00 00 0p FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	G-B	-	8x 09 7E 01 7D FF	y0 50 00 00 00 0p FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	B-R	-	8x 09 7E 01 7E FF	y0 50 00 00 00 0p FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	B-G	-	8x 09 7E 01 7F FF	y0 50 00 00 00 0p FF	pq: 00 (-99) - 63 (00) - C6 (+99)

* Number in ( ) is MENU display values.

BRC-H900 Inquiry Command List (2/3)

Inquiry Command			Command Packet	Inquiry Packet	Comments
DETAIL	DETAIL	-	8x 09 7E 01 60 FF	y0 50 0p FF	
	LEVEL	-	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	FREQUENCY	-	8x 09 7E 01 61 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	CRISPENING	-	8x 09 7E 01 62 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	H/V RATIO	-	8x 09 7E 01 63 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	WHITE LIMITTER	-	8x 09 7E 01 64 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	BLACK LIMITTER	-	8x 09 7E 01 65 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	V DTL CREATION	-	8x 09 7E 01 66 FF	y0 50 0p FF	p: 0 NAM 1: G 2: G+R 3: Y
	KNEE APT LEVEL	-	8x 09 7E 01 67 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
COLOR DETAIL	COLOR DETAIL	-	8x 09 7E 01 68 FF	y0 50 0p FF	p 2: ON 3: OFF
	LEVEL	-	8x 09 7E 01 69 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	AREA INDICATION	-	8x 09 7E 01 6A FF	y0 50 0p FF	p 2: ON 3: OFF
	SATURATION	-	8x 09 7E 01 6B FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	PHASE	-	8x 09 7E 01 4D FF	y0 50 00 00 0p 0q FF	pqr: 000 - 167
	WIDTH	-	8x 09 7E 01 6C FF	y0 50 00 00 0p 0q FF	pq: 00 (0) - 28 (40) - 5A (90)
KNEE	MODE	-	8x 09 7E 01 6D FF	y0 50 0p FF	p 2: ON 3: OFF
	AUTO KNEE	-	8x 09 7E 01 54 FF	y0 50 0p FF	p 0: Auto 4: Off
	POINT	-	8x 09 7E 01 6E FF	y0 50 00 00 0p 0q FF	pq: 32 (50)
	SLOPE	-	8x 09 7E 01 6F FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	KNEE SAT LEVEL	-	8x 09 7E 01 70 FF	y0 50 00 00 0p 0q FF	pq: 00 (00) - 32 (50) - 63 (+99)
GAMMA	MODE	-	8x 09 04 5B FF	y0 50 0p FF	p: 0 STD3 1: CINEMA1 2: STD1 3: STD2 4: STD4 5: CINEMA2 6: CINEMA3 7: CINEMA4
	LEVEL	-	8x 09 7E 01 71 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	BLACK	-	8x 09 7E 01 73 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
	BLACK GAMMA	-	8x 09 7E 01 72 FF	y0 50 00 00 0p 0q FF	pq: 00 (-99) - 63 (00) - C6 (+99)
FLICKER CANCEL	MODE	-	8x 09 04 32 FF	y0 50 0p FF	p 2: ON 3: OFF
	FREQUENCY	-	8x 09 7E 01 74 FF	y0 50 0p FF	p 0: 50Hz 1: 60Hz
FOCUS	MODE	-	8x 09 04 38 FF	y0 50 0p FF	p 2: Auto 3: Manual
PAN TILT	RAMP CURVE	-	8x 09 06 31 FF	y0 50 0p FF	p: 2 MODE1 3 MODE2
SYSTEM	IR RECEIVE	-	8x 09 06 08 FF	y0 50 0p FF	p: 2 ON 3: OFF
	IMG FLIP	-	8x 09 04 66 FF	y0 50 0p FF	p: 2 ON 3: OFF
	RAN REVERSE	-	8x 09 7E 01 06 FF	y0 50 0p FF	p: 1 ON 0: OFF
	TILT REVERSE	-	8x 09 7E 01 09 FF	y0 50 0p FF	p: 1 ON 0: OFF
	DISPLAY INFO	-	8x 09 7E 01 18 FF	y0 50 0p FF	p: 2 ON 3: OFF
	SYNC MASTER	-	8x 09 7E 01 2C FF	y0 50 0p FF	p: 0 HD 3: SD
	HPHASE	-	8x 09 7E 01 3E FF	y0 50 00 0p 0q 0r FF	pqr: 000 - 3BF
	STEADY SHOT	-	8x 09 04 34 FF	y0 50 0p FF	p: 2 ON 3: OFF
	COLOR BAR	-	8x 09 04 7D FF	y0 50 0p FF	p: 2 ON 3: OFF

BRC-H900 Inquiry Command List (3/3)

Inquiry Command			Command Packet	Inquiry Packet	Comments
VIDEO OUT	D-SUB 15 FORMAT	-	8x 09 7E 01 03 FF	y0 50 0p FF	p: 0 RGB 1: YPbPr
	ADD SYNC(RGB)	-	8x 09 7E 01 07 FF	y0 50 0p FF	p: 0 RGB SYNC OFF 2: RGB SYNCON
	SYNC TYPE	-	8x 09 7E 01 1A FF	y0 50 0p FF	p: 0 3-state SYNC 1: VD
	IMG SIZE	-	8x 09 7E 01 3C FF	y0 50 0p FF	p: 0 4: 3 [SQUEEZE] 1 16: 9 [LETTER] 2 4: 3 [CROP]
	SETUP	-	8x 09 7E 01 3F FF	y0 50 0p FF	p: 0 ON (7.5IRE) 1: OFF (0IRE)
BRBK-SA1	D-SUB 9Pin OUT1	-	8x 09 7E 01 24 0p FF	y0 50 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 RGB 1 YCbCr
	D-SUB 9Pin OUT2	-	8x 09 7E 01 25 0p FF	y0 50 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 Y/C 1 VBS
	RGB SYNC	-	8x 09 7E 01 26 0p FF	y0 50 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 2 SYNC OFF 3 SYNC ON RGB
	IMG SIZE	-	8x 09 7E 01 27 0p FF	y0 50 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 4: 3 [SQUEEZE] 1 16: 9 [LETTER] 2 4: 3 [CROP]
	SETUP	-	8x 09 7E 01 3B 0p FF	y0 50 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 ON (7.5IRE) 1 OFF (0IRE)
BRBK-HSD2	IMG SIZE	-	8x 09 7E 01 43 0p FF	y0 50 0q FF	p: 0 Main Unit Card Slot 1 BRU-SF10 Card Slot 1 2 BRU-SF10 Card Slot 2 q: 0 4: 3 [SQUEEZE] 1 16: 9 [LETTER] 2 4: 3 [CROP]
BRBK-IP10	Image Size (CAM_SD_ VideoOutput_ PicSizeInq)	-	8x 09 7E 01 08 FF	y0 50 00 FF	4:3 [Squeeze]
				y0 50 01 FF	16:9 [Letter]
				y0 50 02 FF	4:3 [Crop]
POWER Status	ON/OFF Inquiry	-	8x 09 7E 04 00 FF	y0 50 0p FF	p: 2 ON 3: OFF
CAMERA Software Version	-	-	8x 09 00 02 FF	y0 50 00 01 mn pq rs tu vw FF	mnpq: Model Code (05xx) rstu: ROM version vw: Socket Number (02)
PRESET Drive Speed	-	-	8x 09 7E 01 0B 0p FF	y0 50 qq FF	p: Preset number of speed retrieving -1 (0-F) qq: p position direction speed response 01-18 (h)
TALLY	-	-	8x 09 7E 01 0A FF	y0 50 0p FF	p: 2 ON 3: OFF
PAN-TILT Position	-	-	8x 09 06 12 FF	y0 50 Yp Yq Yr Ys Yt Zp Zq Zr Zs FF	Yp Yq Yr Ys Yt Zp Zq Zr Zs: See Pan/Tilt Position (for reference) in the VISCA Command Setting Values section
CAMERA ID	-	-	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: ID
TITLE (Preset Postion)	ON/OFF Inquiry	-	8x 09 7E 01 17 FF	y0 50 0p FF	p: 2 ON 3: OFF
TITLE Display (Standard)	ON/OFF Inquiry	-	8x 09 7E 01 13 FF	y0 50 0p FF	p: 2 ON 3: OFF
MENU Display Status	ON/OFF Inquiry	-	8x 09 06 06 FF	y0 50 0p FF	p: 2 ON 3: OFF
PRESET	-	-	8x 09 04 3F FF	y0 50 0p FF	Return the last preset number which has been operated (VISCA parameters [0-F])

Inquiry Command			Command Packet	Inquiry Packet	Comments
Zoom	-	-	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: See the VISCA Command Setting Values (ZOOM) section
FOCUS	-	-	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: See the VISCA Command Setting Values (FOCUS) section

BRC-H900 Block Inquiry Command List

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

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

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

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
13	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	Focus Mode (1: Auto 0: Manual)
14	7	0
	6	0
	5	0
	4	0
	3	0
	2	Camera Memory Recall (1: Executing 0: Stopped)
	1	Focus Command (1: Executing 0: Stopped)
	0	Zoom Command (1: Executing 0: Stopped)
15	7	1
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Camera control system inquiry commands (1/2).....Command Packet 8x 09 7E 7E 01 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	WB R Gain(H)
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	WB R-Gain (L)
	2	
	1	
	0	
4	7	0
	6	0
	5	0
	4	0
	3	WB B-Gain (H)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	WB B-Gain (L)
	2	
	1	
	0	

Byte	Bit	Comments
6	7	0
	6	0
	5	COLOR SPEED (1 - 5)
	4	
	3	
	2	WHITE BALANCE MODE (0: Auto 1: Indoor 2: Outdoor 3: Onepush 5: Manual)
	1	
	0	
7	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	DETAIL SETTING (0: Off 1: On)
8	7	0
	6	0
	5	0
	4	0
	3	EXPOSURE MODE (0: Auto 1: Manual A: Shutter Pri B: Iris Pri)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	SPOT LIGHT MODE (1: On 0: Off)
	2	BACK LIGHT MODE (1: On 0: Off)
	1	0
	0	0
10	7	0
	6	0
	5	0
	4	EXPOSURE MODE Manual Shutter Position
	3	
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	EXPOSURE MODE Manual Iris Position
	3	
	2	
	1	
	0	

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	EXPOSURE MODE Manual Gain Position
	3	
	2	
	1	
	0	
13	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	IMG FLIP MODE (1: On 0: Off)
14	7	0
	6	0
	5	0
	4	0
	3	AE LEVEL (5: 1.0 6:-0.5 7: 0 8: +0.5 9: +1.0)
	2	
	1	
	0	
15	7	1
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Camera control system inquiry commands (2/2).....Command Packet 8x 09 7E 7E 02 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0

Byte	Bit	Comments
2	7	0
	6	0
	5	0
	4	0
	3	0
	2	1080/720 mode (1: 1080 0: 720)
	1	59.94/50 mode (1: 59.94 0: 50)
	0	Camera status (1: Power On 0: Sleep)
3	7	0
	6	0
	5	0
	4	0
	3	COLOR OFFSET 0 (-7) - 7 (0) - E (+7)
	2	
	1	
	0	

Byte	Bit	Comments
4	7	0
	6	MATRIX (2: On (STD) 3: OFF 4: ON (HIGH SAT) 5: ON (FL LIGHT)
	5	
	4	
	3	MATRIX COLOR LEVEL 0 (-7) - 7 (0) - E (+7)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	STEADY SHOT (1: On 0: Off)
	3	0
	2	0
	1	FLICKER CANCEL (1: On 0: Off)
	0	FRECKER CANCEL FREQUENCY (0: 50Hz 1: 60Hz)
6	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
7	7	0
	6	0
	5	0
	4	0
	3	0
	2	GAMMA MODE (0 - 7)
	1	
	0	
8	7	0
	6	0
	5	0
	4	0
	3	COLOR PHASE (H)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	COLOR PHASE (L)
	2	
	1	
	0	

Byte	Bit	Comments
10	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	AE SPEED (1: Low 2: Mid 3: High)
	0	
11	7	0
	6	0
	5	0
	4	0
	3	AGC MODE (1: ON 0: OFF)
	2	AGC LIMIT (0: 3dB 1: 6dB 2: 9dB 3: 12dB 4: 18dB)
	1	
	0	
12	7	0
	6	Shutter Point (0: F5.6 1: F8 2: F11 3: F16)
	5	
	4	Shutter Limit (0: 1/100 1: 1/125 2: 1/250 3: 1/500)
	3	
	2	Auto Shutter (1: ON 0: OFF)
	1	AGC Point (0: F5.6 1: F4 2: F2.8)
	0	
13	7	0
	6	0
	5	0
	4	0
	3	R-G (H)
	2	
	1	
	0	
14	7	0
	6	0
	5	0
	4	0
	3	R-G (L)
	2	
	1	
	0	
15	7	1
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Other enlargement inquiry commands (1/5) ..... Command Packet 8x 09 7E 7E 03 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	0
	3	R-B (H)
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	R-B (L)
	2	
	1	
	0	
4	7	0
	6	0
	5	0
	4	0
	3	G-R (H)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	G-R (L)
	2	
	1	
	0	

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	0
	3	G-B (H)
	2	
	1	
	0	
7	7	0
	6	0
	5	0
	4	0
	3	G-B (L)
	2	
	1	
	0	
8	7	0
	6	0
	5	0
	4	0
	3	B-R (H)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	B-R (L)
	2	
	1	
	0	
10	7	0
	6	Camera block FAN rotating status (0: Rotating 1: Stop)
	5	COLOR DETAIL (1: On 0: Off)
	4	Shutter Pri Position
	3	
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	Iris Pri Position
	3	
	2	
	1	
	0	

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
13	7	0
	6	0
	5	0
	4	0
	3	B-G (H)
	2	
	1	
	0	
14	7	0
	6	0
	5	0
	4	0
	3	B-G (L)
	2	
	1	
	0	
15	7	1
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Other enlargement inquiry commands (2/5) ..... Command Packet 8x 09 7E 7E 04 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0

Byte	Bit	Comments
2	7	0
	6	0
	5	0
	4	0
	3	Current R GAIN (H)
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	Current R GAIN (L)
	2	
	1	
	0	

Byte	Bit	Comments
4	7	0
	6	0
	5	0
	4	0
	3	Current B GAIN (H)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	Current B GAIN (L)
	2	
	1	
	0	
6	7	0
	6	0
	5	0
	4	0
	3	DETAIL LEVEL (H)
	2	
	1	
	0	
7	7	0
	6	0
	5	0
	4	0
	3	DETAIL LEVEL (L)
	2	
	1	
	0	
8	7	0
	6	0
	5	0
	4	COLOR DETAIL AREA INDICATION (1: ON 0: OFF)
	3	COLOR DETAIL LEVEL (H)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	COLOR DETAIL LEVEL (L)
	2	
	1	
	0	

Byte	Bit	Comments
10	7	0
	6	0
	5	COLOR DETAIL (1: On 0: Off)
	4	Shutter Current Position
	3	
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	Iris Current Position
	3	
	2	
	1	
	0	
12	7	0
	6	0
	5	0
	4	Gain Current Position
	3	
	2	
	1	
	0	
13	7	0
	6	0
	5	0
	4	0
	3	DETAIL FREQUENCY (H)
	2	
	1	
	0	
14	7	0
	6	0
	5	0
	4	0
	3	DETAIL FREQUENCY (L)
	2	
	1	
	0	
15	7	1
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Other enlargement inquiry commands (3/5) ..... Command Packet 8x 09 7E 7E 05 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	V DETAIL CREATION 0 - 3
	4	
	3	DETAIL CRISPENING (H)
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	DETAIL CRISPENING (L)
	2	
	1	
	0	
4	7	0
	6	0
	5	0
	4	0
	3	DETAIL H/V RATIO (H)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	DETAIL H/V RATIO (L)
	2	
	1	
	0	

Byte	Bit	Comments
6	7	0
	6	0
	5	0
	4	0
	3	DETAIL WHITE LIMITTER (H)
	2	
	1	
	0	
7	7	0
	6	0
	5	0
	4	0
	3	DETAIL WHITE LIMITTER (L)
	2	
	1	
	0	
8	7	0
	6	0
	5	0
	4	0
	3	DETAIL BLACK LIMITTER (H)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	DETAIL BLACK LIMITTER (L)
	2	
	1	
	0	
10	7	0
	6	0
	5	0
	4	0
	3	KNEE APT LEVEL (H)
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	0
	3	KNEE APT LEVEL (L)
	2	
	1	
	0	

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	COLOR DETAIL SATURATION (H)
	2	
	1	
	0	
13	7	0
	6	0
	5	0
	4	0
	3	COLOR DETAIL SATURATION (L)
	2	
	1	
	0	
14	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
15	7	1
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Other enlargement inquiry commands (4/5) ..... Command Packet 8x 09 7E 7E 06 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0

Byte	Bit	Comments
2	7	0
	6	0
	5	0
	4	COLOR DETAIL PHASE (H)
	3	
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	COLOR DETAIL PHASE (L)
	2	
	1	
	0	

Byte	Bit	Comments
4	7	0
	6	0
	5	0
	4	0
	3	COLOR DETAIL WIDTH (H)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	COLOR DETAIL WIDTH (L)
	2	
	1	
	0	
6	7	0
	6	0
	5	AUTO KNEE (1: ON 0: OFF)
	4	KNEE MODE (1: ON 0: OFF)
	3	KNEE POINT (H)
	2	
	1	
	0	
7	7	0
	6	0
	5	0
	4	0
	3	KNEE POINT (L)
	2	
	1	
	0	
8	7	0
	6	0
	5	0
	4	0
	3	KNEE SLOPE (H)
	2	
	1	
	0	
9	7	0
	6	0
	5	0
	4	0
	3	KNEE SLOPE (L)
	2	
	1	
	0	

Byte	Bit	Comments
10	7	0
	6	0
	5	0
	4	0
	3	KNEE SATLEVEL (H)
	2	
	1	
	0	
11	7	0
	6	0
	5	0
	4	0
	3	KNEE SATLEVEL (L)
	2	
	1	
	0	
12	7	0
	6	0
	5	0
	4	0
	3	GAMMA LEVEL (H)
	2	
	1	
	0	
13	7	0
	6	0
	5	0
	4	0
	3	GAMMA LEVEL (L)
	2	
	1	
	0	
14	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
15	7	1
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

Other enlargement inquiry commands (5/5) ..... Command Packet 8x 09 7E 7E 07 FF

Byte	Bit	Comments
0	7	Destination Address
	6	
	5	
	4	
	3	Source Address
	2	
	1	
	0	
1	7	0
	6	1
	5	0
	4	1
	3	0
	2	0
	1	0
	0	0
2	7	0
	6	0
	5	0
	4	BLACK LEVEL (H)
	3	
	2	
	1	
	0	
3	7	0
	6	0
	5	0
	4	0
	3	BLACK LEVEL (L)
	2	
	1	
	0	
4	7	0
	6	0
	5	0
	4	0
	3	BLACK GAMM LEVEL (H)
	2	
	1	
	0	
5	7	0
	6	0
	5	0
	4	0
	3	BLACK GAMM LEVEL (L)
	2	
	1	
	0	

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

Byte	Bit	Comments
12	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
13	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
14	7	0
	6	0
	5	0
	4	0
	3	0
	2	0
	1	0
	0	0
15	7	1
	6	1
	5	1
	4	1
	3	1
	2	1
	1	1
	0	1

VISCA Command Setting Values

IRIS		
Parameter		
p	q	F No.
1	9	F1.9 (OPEN)
1	8	F2.2
1	7	F2.4
1	6	F2.6
1	5	F2.8
1	4	F3.1
1	3	F3.4
1	2	F3.7
1	1	F4
1	0	F4.4
0	F	F4.8

IRIS		
0	E	F5.2
0	D	F5.6
0	C	F6.2
0	B	F6.8
0	A	F7.3
0	9	F8
0	8	F8.7
0	7	F9.6
0	6	F10
0	5	F11
0	4	F12
0	3	F13
0	2	F15
0	1	F16

IRIS		
0	0	CLOSE

SHUTTER		
Parameter		
p	q	Shutter Speed (sec)
1	0	EX1 (1/60)*1
0	F	1/8000
0	E	1/4000
0	D	1/2000
0	C	1/1000
0	B	1/500
0	A	1/250
0	9	1/125
0	8	1/120
0	7	1/100
0	6	1/60*2

*1 The setting is selectable only when the video format is set to 1080/50i or 720/50p.

*2 The setting is 1/60 when the video format is set to 1080/59.94i or 720/59.94p.
The setting is 1/50 when the video format is set to 1080/50i or 720/50p.

GAIN		
Parameter		
p	q	Gain (dB)
1	9	24
1	8	23
1	7	22
1	6	21
1	5	20
1	4	19
1	3	18
1	2	17
1	1	16
1	0	15
0	F	14
0	E	13
0	D	12
0	C	11
0	B	10
0	A	9
0	9	8
0	8	7
0	7	6
0	6	5
0	5	4
0	4	3
0	3	2
0	2	1
0	1	0
0	0	-3

Pan/Tilt Position (for reference)

Pan

Angle (degrees)	Left	Right
	Yp Yq Yr Ys Yt	Yp Yq Yr Ys Yt
0	00000	00000
10	00938	FF6C8
20	01270	FED90
30	01BA8	FE458
40	024E0	FDB20
50	02E18	FD1E8
60	03750	FC8B0
70	04088	FBF78
80	049C0	FB640
90	052F8	FAD08
100	05C30	FA3D0
110	06568	F9A98
120	06EA0	F9160
130	077D8	F8828
140	08110	F7EF0
150	08A48	F75B8
160	09380	F6C80
169	09BDE	F6422

Tilt

Angle (degrees)	Up	Down
	Zp Zq Zr Zs	Zp Zq Zr Zs
0	0000	0000
10	0938	F6C8
20	1270	ED90
30	1BA8	E458
40	24E0	-
50	2E18	-
60	3750	-
70	4088	-
80	49C0	-
90	52F8	-

Focus Ratio and Focus Distance (for reference)

Focus Ratio	Focus Distance
1000	∞
2000	14.6m
3000	6.3m
4000	3.9m
5000	2.8m
6000	2.2m
7000	1.7m
8000	1.4m
9000	1.2m
A000	1.0m
B000	0.9m
C000	0.8m

Zoom Position and Zoom Ratio (for reference)

Zoom Position	Zoom Ratio
0000	×1
1140	×2
1A80	×3
2180	×4
2740	×5
2BC0	×6
2F60	×7
32A0	×8
35A0	×9
3840	×10
3AA0	×11
3CC0	×12
3EC0	×13
4000	×14

Pan/Tilt Status Code List

P	Q	R	S	
0 – – –	– – – –	0 – – –	– – – 1	Panning reaches the end of the left.
0 – – –	– – – –	0 – – –	– – 1 –	Panning reaches the end of the right.
0 – – –	– – – –	0 – – –	– 1 – –	Tilting reaches the upper limit.
0 – – –	– – – –	0 – – –	1 – – –	Tilting reaches the lower limit.
0 – – –	– – – –	0 – – –	1 1 1 1	Pan/tilt position cannot be detected.
0 – – –	– – – –	– – 0 0	– – – –	Pan functions normally.
0 – – –	– – – –	– – 1 0	– – – –	Pan mechanism is defective.
0 – – –	– – 0 0	0 – – –	– – – –	Tilt functions normally.
0 – – –	– – 1 0	0 – – –	– – – –	Tilt mechanism is defective.
0 – – –	0 1 – –	0 – – –	– – – –	Pan/Tilt operating
0 – – –	1 0 – –	0 – – –	– – – –	Pan/Tilt operations complete.
0 – 0 0	– – – –	0 – – –	– – – –	Not initialized
0 – 0 1	– – – –	0 – – –	– – – –	Initializing
0 – 1 0	– – – –	0 – – –	– – – –	Initialization completes.
0 – 1 1	– – – –	0 – – –	– – – –	Initialization failed.

(– : optional)

Memory Function (Inquiry Commands)

Preset No. last operated	pp: Memory number last operated	Comments
–	00	While no Recall commands are used after the power has been tuned on
1	7F	≠00 (or =00 for Reset, Set and Recall commands)
2	01	
3	02	
4	03	
5	04	
6	05	
7	06	
8	07	
9	08	
10	09	
11	0A	
12	0B	
13	0C	
14	0D	
15	0E	
16	0F	

IP Card Setting Command

The following commands are provided for setting the IP address or name of the IP card that is mounted on the BRC series camera.

No.	Name	Description
1	Setting Protocol: Inquiry	The controller inquires the network setting for the IP card.
2	Setting Protocol: Inquiry reply	The IP card replies according to the inquiry from the controller.
3	Setting Protocol: Network setting	The controller sets the network setting of the IP card.
4	Setting Protocol: Network setting reply	The IP card replies according to the network setting of the controller.

The network setting of the IP card is performed as communication sequence in the following.
Connect the computer that configures the settings to the same segment as the IP card.

1 Inquiry

The controller sends the inquiry packet to the broadcast address (255.255.255.255), specified port number (52380) of UDP. The IP card replies as the inquiry reply packet.

2 Network setting

The controller sends the network setting packet to the broadcast address (255.255.255.255), specified port number (52380) of UDP. The receiving side sees the MAC address unit in the packet, and returns ACK as the network setting reply if it is the request for the receiving side.
If the receiving side fails to set, it returns NACK as the network setting reply.

Command	Data
Inquiry UDP Broadcast address (255.255.255.255) Specified port number (52380)	02 ENQ:network *1 FF 03
Inquiry reply UDP Broadcast address (255.255.255.255) Specified port number (52380)	02 MAC:**-**-**-**-**-** *1 FF MODEL:IPCARD *1 FF SOFTVERSION:**.**.** *1 FF IPADR:***.***.***.*** *1 FF MASK:***.***.***.*** *1 FF GATEWAY:***.***.***.*** *1 *4 FF *4 NAME:xxxxxxxx *1 FF WRITE:on *1 FF 03
Network setting UDP Broadcast address (255.255.255.255) Specified port number (52380)	02 MAC:**-**-**-**-**-** *1 FF IPADR:***.***.***.*** *1 FF MASK:***.***.***.*** *1 FF GATEWAY:***.***.***.*** *1 *5 FF *5 NAME:xxxxxxxx *1 FF 03
Network setting reply UDP Broadcast address (255.255.255.255) Specified port number (52380)	02 ACK:**-**-**-**-**-** *2 “xxxx” *3 FF 03

*1 Uses the ASCII code.
*2 Uses the ASCII code. Returns as ”NAK:**-**-**-**-**-**” for NAK.
*3 Uses the ASCII code. Returns by adding the detail message, if necessary.
*4 Displays with BRBK-IP10 firmware version 2.10 or later.
*5 Sending possible with BRBK-IP10 firmware version 2.10 or later.
If GATEWAY is not used with BRBK-IP10 firmware version 2.10 or later, send the following;
GATEWAY:0.0.0.0
FF

Note

The IP card name is up to 8 characters of alphanumeric characters and blank.

Revision History

Version	Item	Description
1.00		New edition
2.00	• Added chapters of “VISCA over IP” and “IP Card Setting Command” • Added execution and inquiry commands for BRBK-IP10	
2.10	• Compatible with the GATEWAY address of BRBK-IP10 firmware version 2.10	Added “GATEWAY” to the table of “IP Card Setting Command”
2.20	• Other enlargement inquiry commands (1/5) 10 Byte 6 Bit Camera block FAN rotation • SHUTTER	Correction of errors Added the EX1 mode to the shutter speed when the video format is set to 50i or 50p.