HD/4K Integrated Camera Interface Specifications

AW-UE20/AW-HE20

2022/4/1

Panasonic Connect Co., Ltd.

■目次

1.Introduction

This manual describes the external interface specifications which are applicable when the AW-UE20/AW-HE20 is operated.

2.Configuration outline

This manual has the following general configuration.

① Overview of the external interface
It is possible to control the pan, tilt and white balance adjustments.
It is also possible to acquire the gain and other camera information by initiating queries.
The various functions are employed for the operations with the camera using HTTP which is the host protocol of TCP.
For further details, refer to chapter 3 and chapter 4.

②Camera information update notification
The local terminal is notified of the values of the gain and other settings which have been changed at another terminal or other terminals so that it can acquire the camera information.
This feature is useful when one camera is controlled by a multiple number of terminals, and when the setting for enabling update notifications to be received has been established, the information which has been changed by other terminals can be acquired.
For further details, refer to chapter 5.

③Camera information batch acquisition
The camera information can be acquired in batch form. Since there is no need to query each and every camera information item when this feature is used, the feature is useful when all the camera information is required such as at startup.
For further details, refer to chapter 6.

④Error return
An error whether ER1, ER2 or ER3 is returned when an error has been generated by a command in ① above or when the AWB result contains an error.
For further details, refer to chapter 7.

⑤Menu list and command correspondence table
This table which summarizes AW-UE20/AW-HE20 menu list and commands related to each menu item.
For further details, refer to chapter 8.

⑥Control and request command
Describes the specifications of commands used in AW-UE20/AW-HE20.
For further details, refer to chapter 9.

3.Command type

There are two types of external interface command: Pan/Tilt control commands and camera control command.

3-1.Pan/Tilt control command

This interface controls the pan tilt head.
Starts with # (0x23), and ends with [CR](0x0d)
example）Pan stop command
　　# 　P 　5 　0 　[CR]
　0x23　0x50　0x35　0x30　0x0D
　※[CR] is not required for IP communication

Commands which command type is "ptz"(in chapter 9) are for Pan/Tilt control commands

3-2.Camera control command

This interface is for the camera lens control and image/color adjustments.
Starts with [STX] (0x02), and ends with [ETX] (0x03)
":" letter is required before [Data] for camera Control commands.
example）Auto Focus setting
　[STX] 　O 　A 　F 　: 　1 　[ETX]
　0x02　0x4F　0x41　0x46　0x3A　0x31　0x03
　※[STX] and [ETX] are not required for IP communication

4.Communication method

The camera can be controled by serial communication and IP communication respectively

4-1.Serial communication

The camera communicates with RS422. The communication specifications are as follows

Method	Half Duplex
Commnunication Speed	9600bps
Data bit	8bit
Stop bit	1bit
Parity	None
Flow contorol	None

▼Sequence of serial communication

In case of Pan/Tilt Control command
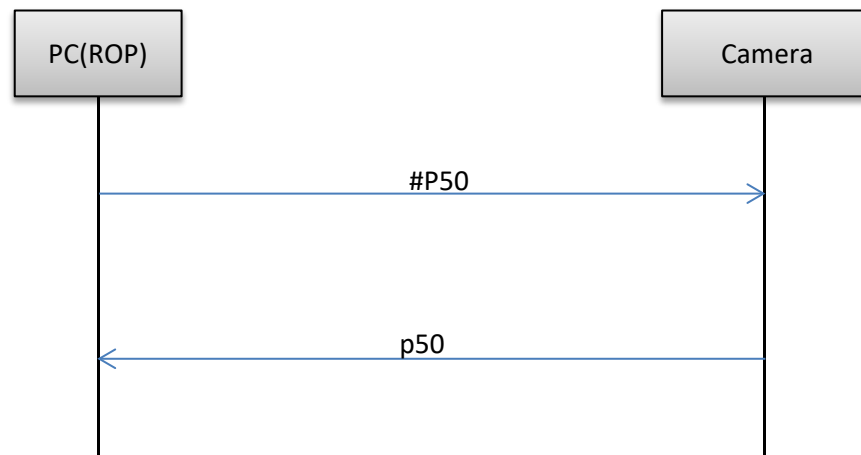
In case of Camera Control command
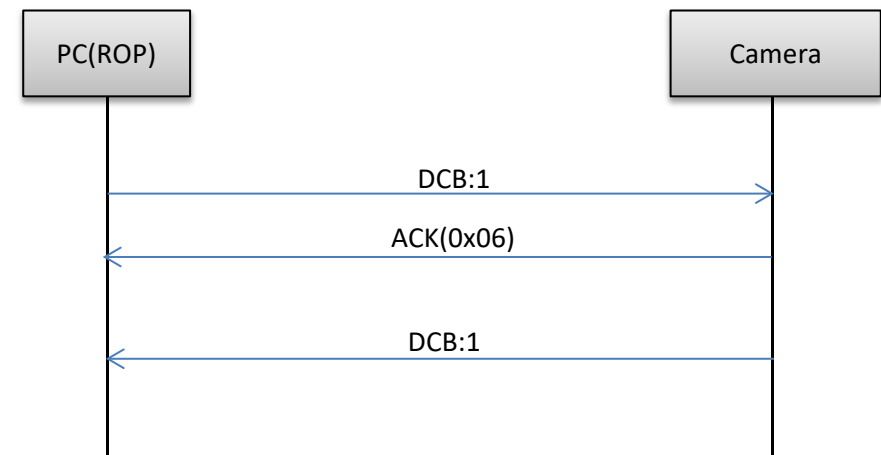
【Restrictions】

1. When using the pan-tilt head control commands, send the commands with a gap of 40 ms between each command. Given below is the sequence.

2. Some settings and conditions may restrict the effects of other settings (※ including those with exclusive control conditions).
See more detail in Capter 8 for the exclusive control conditions

3. Send the commands which change the settings only at the point in time when the changes are required. (Do not send them at regular intervals.)

4-2.IP communication

In case of Pan/Tilt Control command

▼Send format

http://[**IP Address**]/cgi-bin/aw_ptz?cmd=[**Command**]&res=[**Type**]

※IP Address・・・IP address of camera at connection destination

※Command・・・・・Details given in "Command" column in Chapter 9

※Type・・・・・・・・Fixed at "1"

▼Receive format

200 OK "**Command**"

※Command・・・Response value of each command;
set in the HTTP message body

See more detail in Capter 7 for the error communication sequence
for the transmitted command

▼Sequence

PC(ROP)		Camera

http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23P50&res=1 →

← 200 OK "p50"

※Depending on the browser or middleware used, "#" may have
to be converted to "%23" by ASCII conversion.

In case of Camera Control command

▼Send format

http://[**IP Address**]/cgi-bin/aw_cam?cmd=[**Command**]&res=[**Type**]

※IP Address・・・IP address of camera at connection destination

※Command・・・・・Details given in "Command" column in Chapter 9
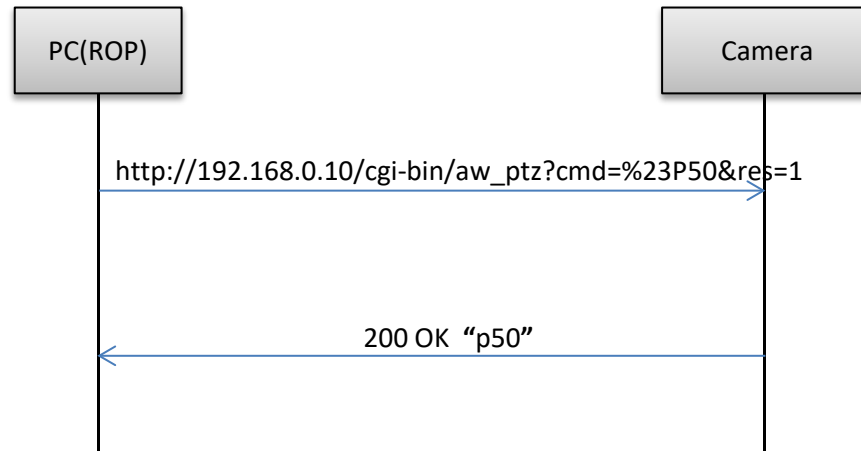
※Type・・・・・・・・Fixed at "1"

▼Receive format

200 OK "**Command**"

※Command・・・Response value of each command;
set in the HTTP message body

See more detail in Capter 7 for the error communication sequence
for the transmitted command

▼Sequence

PC(ROP)		Camera

http://192.168.0.10/cgi-bin/aw_cam?cmd=DCB:1&res=1 →

← 200 OK "DCB:1"
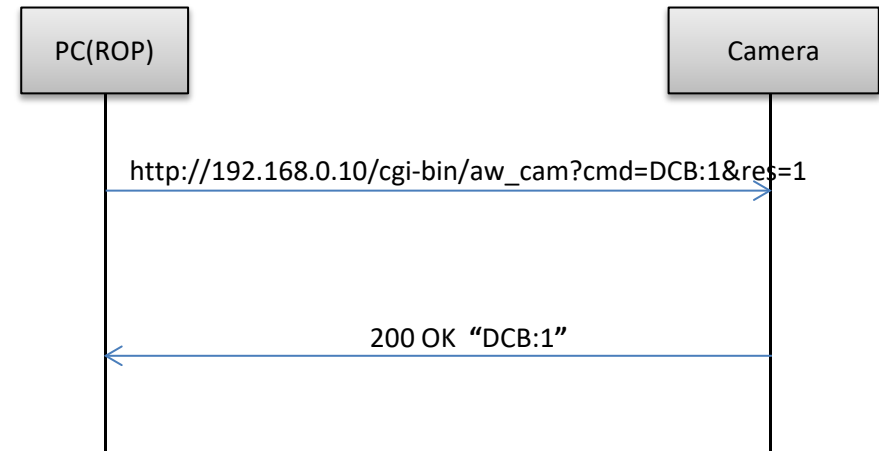
【Restrictions】
 1. When using the pan-tilt head control commands, send the commands with a gap of 40 ms between each command. Given below is the sequence.

 2. Keep-Alive cannot be set with HTTP connections.
  Connect and disconnect are performed each time a command is sent or received.

 3. Some settings and conditions may restrict the effects of other settings (※ including those with exclusive control conditions).
  See more detail in Capter 8 for the exclusive control conditions

 4. Send the commands which change the settings only at the point in time when the changes are required. (Do not send them at regular intervals.)

5.Update notification

The following restrictions apply to camera operations that are performed using HTTP communication and
that have been described in the previous chapters:
A) Even when a camera setting is changed by one terminal, the other terminals will not know that the setting has been changed
   unless they send the query command to the camera.
B) In the case of a preset playback, AWB/ABB execution or other control commands that take time to be processed,
   it is necessary to wait until the processing is completed for the response.

By sending information autonomously from the camera to the terminals, it is possible to do the following:
A) When a camera setting is changed by one terminal, the other terminals are notified of the setting change immediately.
B) With a control command that takes time to be processed, the HTTP response is returned as soon as the command has been received,
   and separate notification of the processing result is given as soon as the processing is completed.
These functions are referred to as the camera information update notification function.
This chapter uses the term "update notification" to refer to this function

5-1.Update notification sequence

When the settings of the camera have been changed from the local terminal (PC1), the changes are also posted
by an update notification separately from the HTTP response to the command.

| PC(ROP) | PC(ROP) | PC(ROP) | Camera |

DCB:1 — Receive control command

DCB:1 — Response

DCB:1
DCB:1
DCB:1 — Update notification
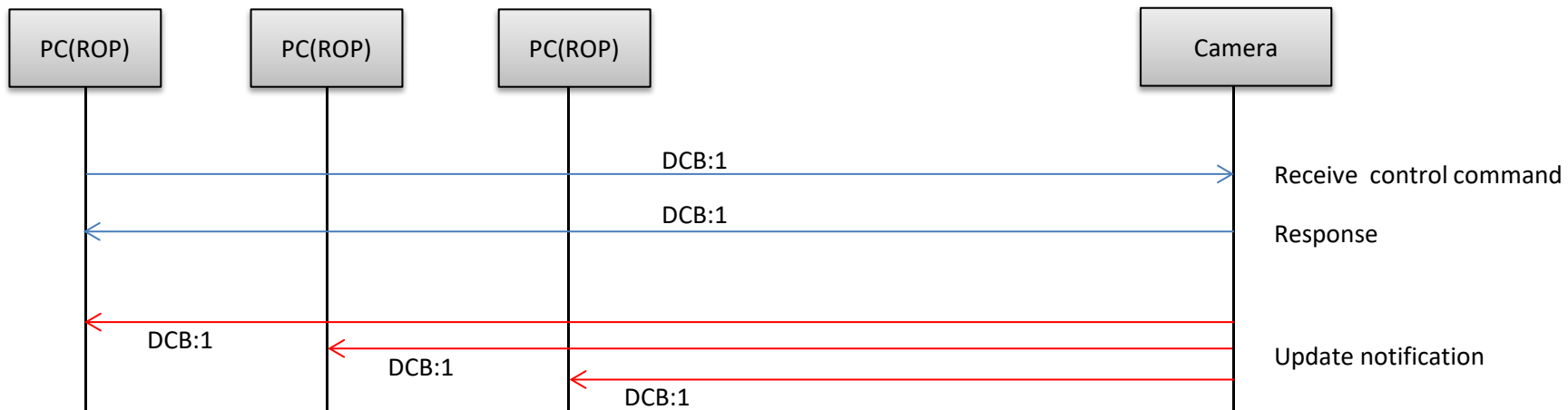
Some commands are not to be inicated as update notifications. See Chapter:9 for more detail

5-2.Data format for update notifications

▼IP
The update notification is given to the TCP port on the terminal whose number was specified using the update notification start command by TCP protocol communication.
A breakdown of the data received is given below.
【Receive data】

Reserve (22Byte)	Size (2Byte)	Reserve (4Byte)	Update notification information (Variable length: Max. 504 bytes)	Reserve (24Byte)

The updated information is set in "Update notification information" of the receive data format.
The data received from the camera has a variable length.
The size of the update notification information is the value obtained by subtracting 8 bytes from the "Size" area setting.
・"Update notification information" data length ＝ "Size" － 8 bytes

【Update notification information format】
[CR][LF][Command response format][CR][LF]
※ [CR]:0x0d、[LF]:0x0a

ex1)Power: On
[CR][LF]p1[CR][LF]

ex2)Color bar: On
[CR][LF]DCB:1[CR][LF]

▼Serial
No update notification

5-3.Procedure of start/end of the update notifications reception

To receive an update notification via IP, you must perform the update notification reception start process in advance.
At a time like this, the number of the TCP port on the terminal for receiving the update notification (having the update notification sent) is specified.

① Update notification receive start step

example）When reception is to be started with "192.168.0.10" used as the IP address of the camera
http://192.168.0.10/cgi-bin/event?connect=start&my_port=31004&uid=0
※ my_port … Number of the TCP port on the terminal (any port)

【Update notification receive start sequence】
The update notification receive start command is sent from the terminal where the update notifications are to be received.
"204 No Content" is returned from the camera which has received the command.

```
┌─────────┐                                                        ┌─────────┐
│ PC(ROP) │                                                        │ Camera  │
└─────────┘                                                        └─────────┘
     │                                                                  │
     │  http://192.168.0.10/cgi-bin/event?connect=start&my_port=31004&uid=0
     │ ───────────────────────────────────────────────────────────────>│
     │                                                                  │      The port of PC1 where the update
     │                                                                  │      notifications are received is
     │                                                                  │      registered as port number 31004.
     │                        204 No Content                            │
     │ <────────────────────────────────────────────────────────────── │
     │                                                                  │
```

【Caution】
Proceed with the update notification receive start step when communication has been cut off
because the LAN cable has been disconnected, for example.

② Update notification receive end step
To close the application of the client, the update notification receive end step must be taken without fail.
example) When reception is to be ended with "192.168.0.10" used as the IP address of the camera
http://192.168.0.10/cgi-bin/event?connect=stop&my_port=31004&uid=0
※ my_port … Number of the TCP port on the terminal

【Update notification receive end sequence】
　　The update notification receive end command is sent from the terminal which has received the update notifications.
　　"204 No Content" is returned from the camera which received the command.

PC(ROP)		Camera

http://192.168.0.10/cgi-bin/event?connect=stop&my_port=31004&uid=0　→

The receiving of the update
notifications at PC is ended

←　**204 No Content**
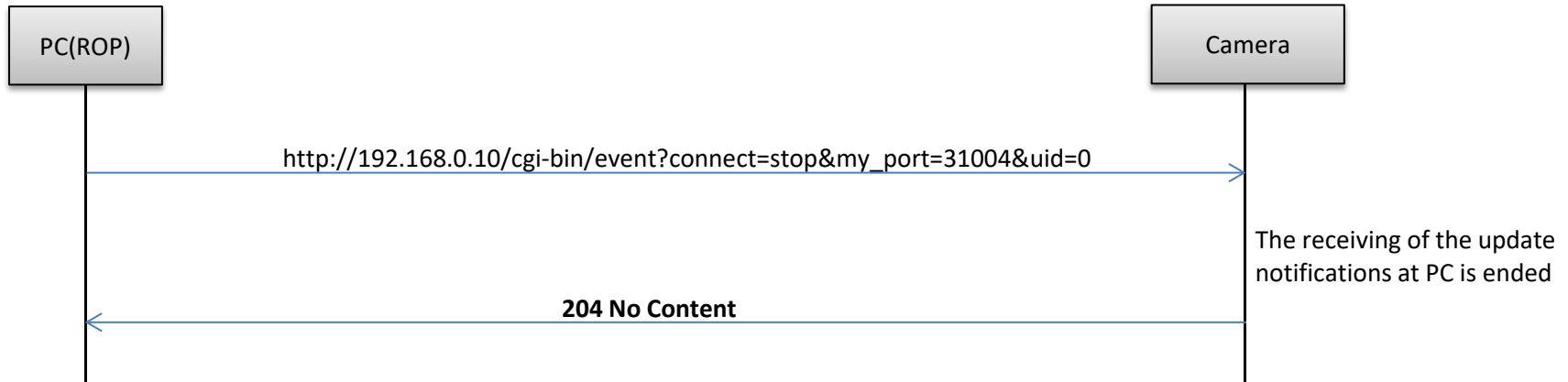
③　Registered number of update notifications
　　You can query the number of external devices (RP remote controller etc.) connected to the camera with the following command.
　　The number of connected device increases with the procedure to start receiving update notifications and decreases the procedure
　　to start receiving update notifications. The number of connected device also decreases when it can not communicate with the device.
　　Number of terminals which can receive update notifications at the same time: 5
　　When the remote camera controller is connected, it is counted as one unit.
　　example) When the IP address of the camera is "192.168.0.10" and you want to request registered number.
　　http://192.168.0.10/cgi-bin/man_session?command=get

PC(ROP)		Camera

http://192.168.0.10/cgi-bin/man_session?command=get　→

←　**200 OK "Event session:1"**
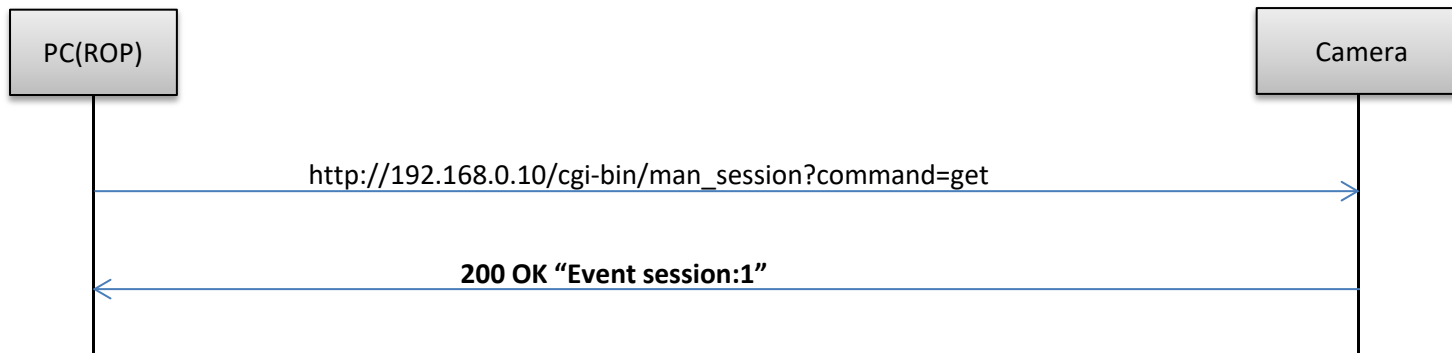
6.Special sequences

Update notifications are sometimes sent at times other than when the settings or statuses of the camera have been changed.
Some cases are presented below.
It is assumed that the update notification start command has been sent to all the terminals in the sequence
and that the terminals can receive the update notifications from the camera.

6-1.Preset playback

This command sends the preset playback completion notification as an update notification when preset playback in the camera has been completed.

Notification	Remarks
q[Data]	Number of the preset which was played back － 1

【Preset playback sequence】
This is the sequence in which preset number 08 is played back.
As soon as the preset playback command is received, "s07" is returned as the HTTP response,
and as soon as the playback is completed after this, "q07" is posted separately as the update notification.
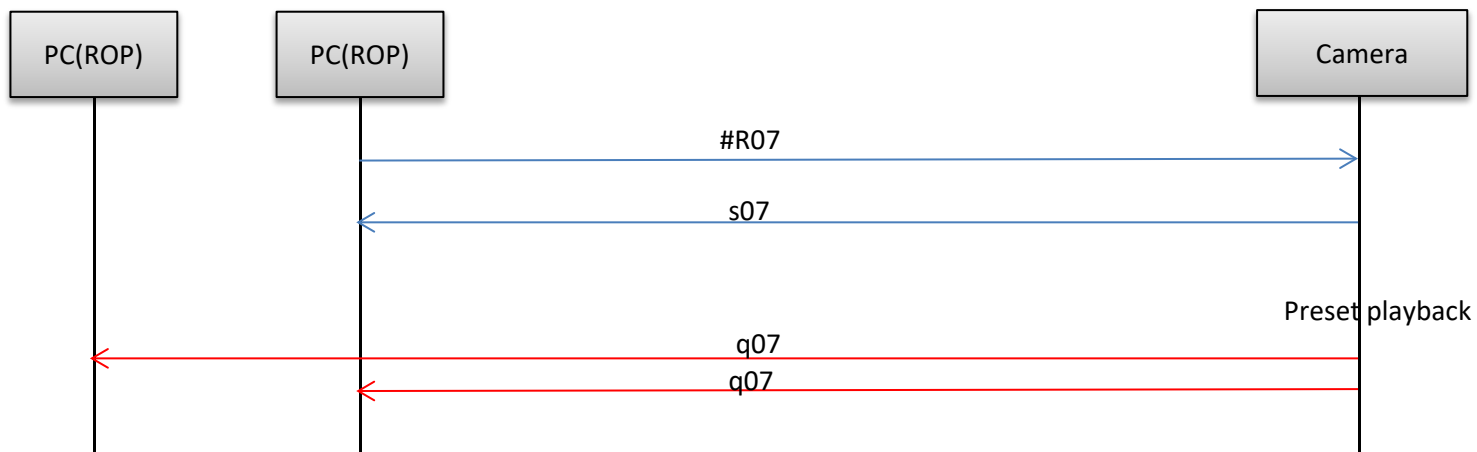
6-2.Lens Information

Notification is sent in a 300ms cycle when "On: Information is posted" has been set for the lens information notification On/Off control command

Notification	Lens information
LPI[ZZZ][FFF][III]	ZZZ Zoom position FFF Focus position III Iris position (Expressed in 3 digits each)

【Sequence when lens information is changed】
Start lens information notification when the camera receive lens information On command (#LPC1).
When the camera detects changes in the lens information, the changed lens information is sent to the terminals,
and terminals PC1 and PC2 receive this information.
Stop lens information notification when the camera receive lens information Off command (#LPC0).

14
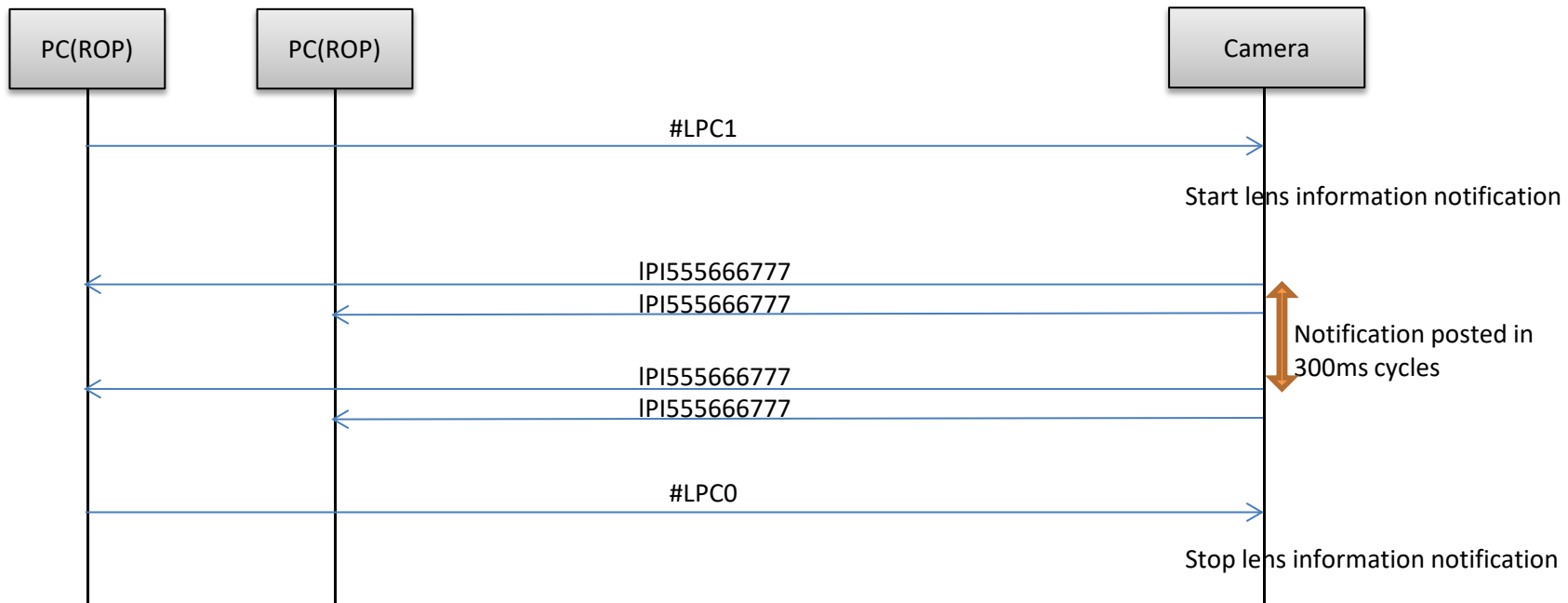
6-3.AWB/ABB execution

This command sends the execution results as an update notification when execution of AWB/ABB has been completed by the camera.

Notification	Remarks
OWS	AWB execution successful
OAS	ABB execution successful

【AWB execution sequence】
As soon as the AWB/ABB execution command is received, return response,
and as soon as the AWB execution is completed, "OWS" is posted separately as the update notification.

Serial

PC(ROP)	PC(ROP)	Camera

OWS

AWB execute

OWS

OWS

IP

PC(ROP)	PC(ROP)	Camera

OWS

OWS

AWB execute

OWS

OWS
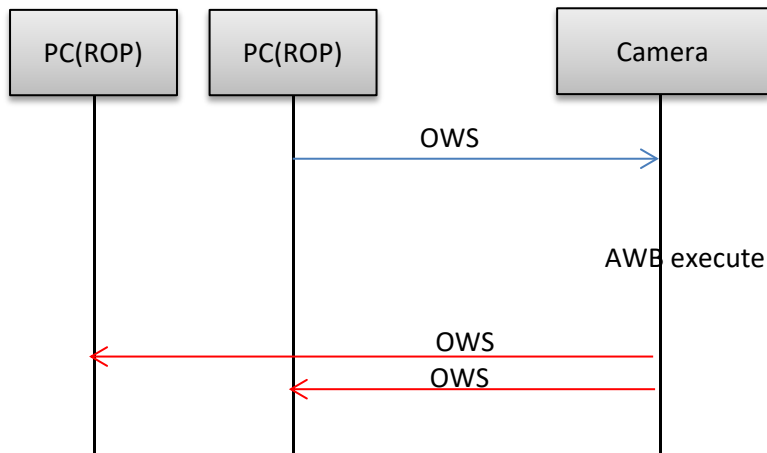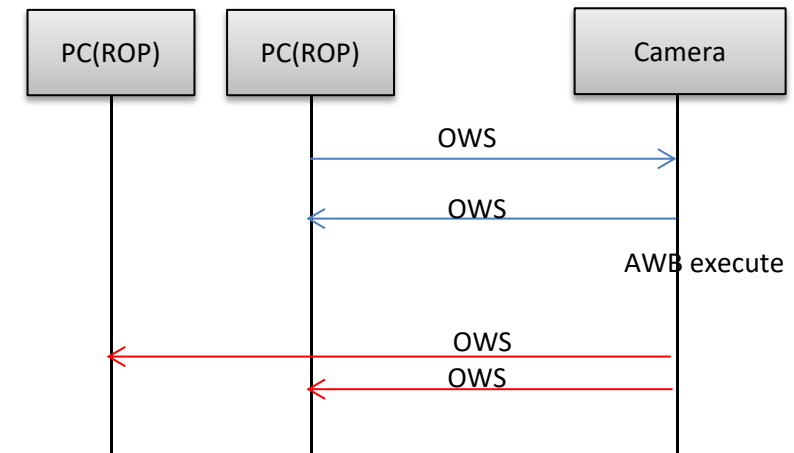
6-4.Camera information batch acquisition

All the information of the camera can be acquired together as a batch.

【Command format】
[send]
http://[IP Address]/live/camdata.html

[receive]
200 OK "Camera information"
See chapter 9 for detail of camera information

【Sequence】

```
┌──────────┐                              ┌──────────┐
│ PC(ROP)  │                              │  Camera  │
└──────────┘                              └──────────┘
     │                                          │
     │   http://192.168.0.10/live/camdata.html  │
     │─────────────────────────────────────────>│
     │                                          │
     │        200 OK "camera information"       │
     │<─────────────────────────────────────────│
     │                                          │
```
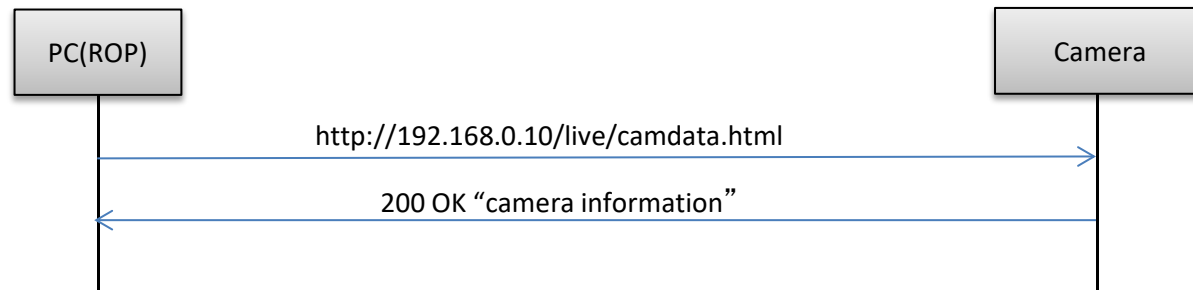
7.Error return

The three errors ER1, ER2 and ER3 below are returned in response to control or query commands by the camera.

<u>In the case of Pan/Tilt control command</u>
  ▼ER1 (unsupported command)
    This error is generated when a command which is not supported
    by the camera has been received by the camera
    example) When the non existent "#AX" command
        is executed for the camera
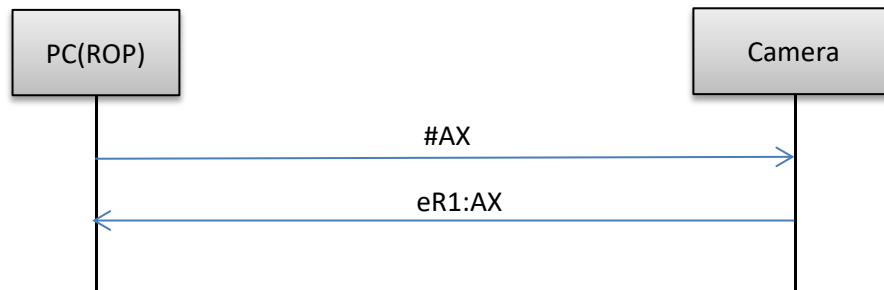
PC(ROP)		Camera
	#AX →	
	← eR1:AX	

  ▼ER2 (busy status)
    This error is generated during Standby (Power Off) or
    at other times when the camera is in the busy status.

PC(ROP)		Camera
	#AXZ555 →	Standby
	← eR2:AXZ	
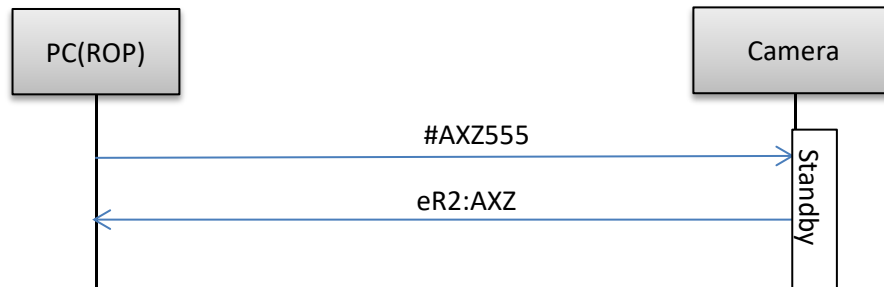
<u>In the case of Camera control command</u>
  ▼ER1 (unsupported command)
    This error is generated when a command which is not supported
    by the camera has been received by the camera
    example) When the non existent "XF" command
        is executed for the camera
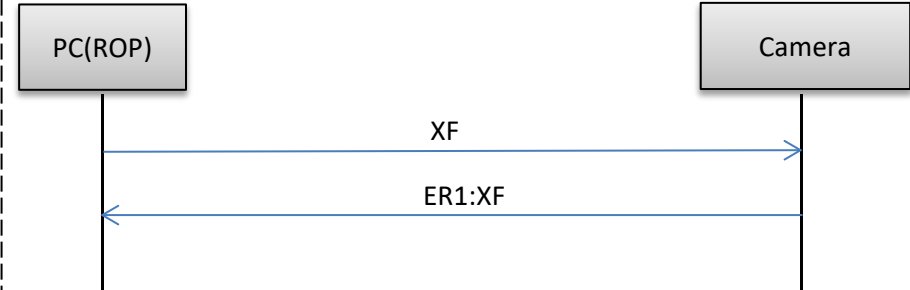
PC(ROP)		Camera
	XF →	
	← ER1:XF	

  ▼ER2 (busy status)
    This error is generated during Standby (Power Off) or
    at other times when the camera is in the busy status.

PC(ROP)		Camera
	XSF:1 →	Standby
	← ER2:XSF	
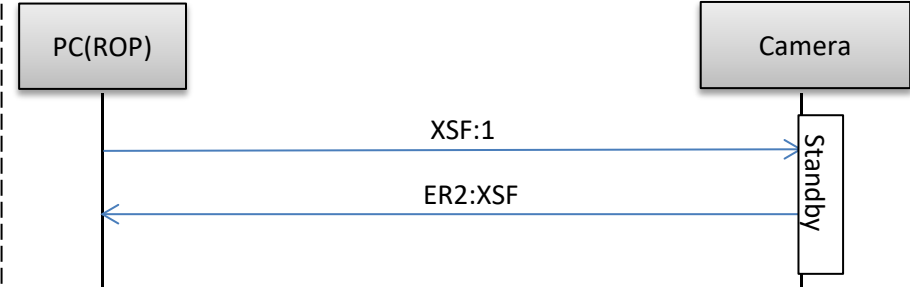
▼ER3 (outside acceptable range)
　　This error is generated when the data value of a command
　　is outside the acceptable range.
　　　example) The "#AXZ" command was executed with a data
　　　　　　　value of "000" which is outside the acceptable range.
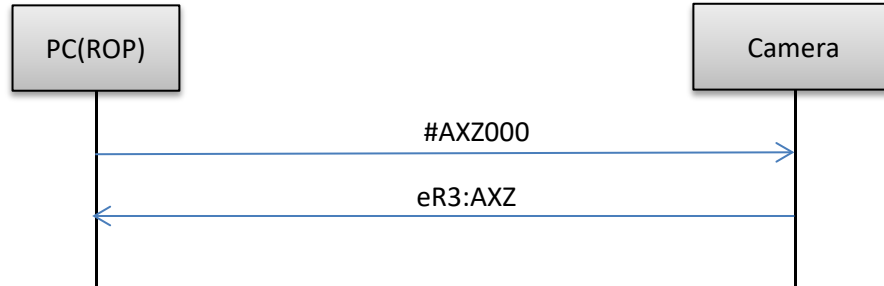
PC(ROP)		Camera

#AXZ000 →

eR3:AXZ ←

▼ER3 (outside acceptable range)
　　This error is generated when the data value of a command
　　is outside the acceptable range.
　　　example) The "OGU (gain setting)" command was executed with
　　　　　　　a data value of "90" which is outside the acceptable range.

PC(ROP)		Camera

OGU:90 →

ER3:OGU ←
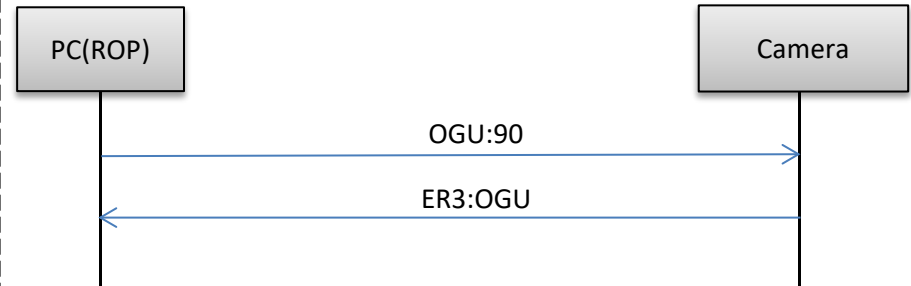
8.AW-UE20/AW-HE20 Menu-Command Correspondance Table

Menu				Command	Remarks
Camera					
	Scene			XSF	
		Brightness			
			Picture Level	OSD:48	Not available when Iris Mode is Manual.
			AGC MaxGain	OSD:69	
			Slow Shutter	OSJ:80	Available when Scene is Full Auto.
			Iris Mode	ORS #D3	Available when Scene is Scene1/Scene2.
			Shutter Mode	OSJ:03	Available when Scene is Scene1/Scene2.
			Step/Synchro	OSJ:04 OSJ:05 OSJ:06 OSJ:07 OSJ:08 OSJ:09	Available when Shutter Mode is Step/Synchro.
			Gain	OGU	Available when Scene is Scene1/Scene2.
			AGC Max Gain	OSD:69	
			Frame Mix	OSA:65	Available when Scene is Scene1/Scene2 and Shutter Mode is Off.
			Auto F.Mix Max Gain	OSE:74	Available when Scene is Scene1/Scene2.
		Picture			
			Chroma Level	OCG	
			White Balance Mode	OAW OWS OAS	
			R Gain	OSG:39	Available when White Balance Mode is AWB A/AWB B.
			B Gain	OSG:3A	Available when White Balance Mode is AWB A/AWB B.
			Pedestal	OSJ:0F	
			Detail	ODT	
			Contrast	OSD:50	
			DRS	OSE:33	
			Back Light COMP.	OSE:73	
			DNR	OSD:3A	
System					
	Priority Mode			−	There is no corresponding AW command. Can be set by CGI command.
	Frequency			OSE:77	
	Format			OSA:87	
	Install Position			#INS	
	Preset Speed Table			#PST	
	Preset Speed			#UPVS	
	Preset Scope			OSE:71	
	Speed With Zoom Position			#SWZ	
	Focus Mode			OAF #D1	
	Focus Adjust With PTZ.			OAZ	Available when Focus Mode is Manual.
	Zoom Mode			OSE:70 OSD:B3	
		Max Digital Zoom		OSE:7A	Available when Zoom Mode is D. Zoom.
	Digital Extender			OSJ:4E	Available when Zoom Mode is Opt. Zoom.
	Tally			#TAE #DA #TAA	
	Status Lamp			#LMP	
	Wireless ID			#RID #WLC	
	OSD off with Tally			OSE:75	
	Color Bar			DCB	
	Audio			OSA:D0	
		Input Type		OSA:D1	Available when Focus Audio is On.
		Volume Level		OSA:D5	Available when Focus Audio is On.
		Plugin Power		OSA:D2	Available when Focus Audio is On.
	Serial Com. Protcol			OVP:02	
		Connector Select		OVP:03	Available when Focus Serial Com. Protocol is Standard.
		Baud Rate		OVP:04	Available when Focus Serial Com. Protocol is Standard.
		Camera Address		OVP:05	Available when Focus Connector Select is RS232C.
Maintenance					
	Langage			OSJ:82	
	FW Version			QSV	

Commands not linked to menus			
MENU制御			
	MENU(MENU ON/OFF)	DUS	
	MENU SW(MENU Cancel)	DPG	Available when Menu is On
	ITEM SW(ENTER Botton)	DIT	Available when Menu is On
	YES SW(UP Botton)	DUP	Available when Menu is On
	NO SW(Down Botton)	DDW	Available when Menu is On
	RIGHT SW(Right Botton)	DRT	Available when Menu is On
	LEFT SW(Left Botton)	DLT	Available when Menu is On
Pan/Tilt			
	Pan/Tilt Absolute Position Control	#APC	
	PAN SPEED	#P	
	TILT SPEED	#T	
	Pan Tilt Speed Control	#PTS	
	Limitation Control	#LC	
Lens			
	Zoom Position Control	#AXZ	
	Request Zoom Position	#GZ	
	Zoom Speed	#Z	
	D-Zoom Magnification	OSE:76	
	Focus Position Control	#AXF	Available when Focus Mode is Manual
	Request Focus Position	#GF	
	Focus Speed Control	#F	Available when Focus Mode is Manual
	One Shot Focus	OSE:69	Available when Focus Mode is Manual
	Iris Control	#AXI #I ORV	Available when Iris Mode is Manual
	Request Iris Position	#GI	
	Request Iris F No.	QIF	
	Iris Follow	QSD:4F	
	Lens Position Information Control	#LPC	
	Lens Position Information	#LPI	
Preset			
	Recall Preset Memory	#R	
	Save Preset Memory	#M	
	Delete Preset Memory	#C	
	Preset Max NumberConfirmation	#PE	
	Request Latest Recall Preset No.	#S	
	Preset completion notification	q	
Others			
	MODEL NUMBER	QID	
	PowerON, Standby	#O	

Scene

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Scene	Control	XSF:[Data]	0 1 2 3	– Scene1 Scene2 Full Auto	cam ※1	※2	OSF:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=XSF:1&res=1
	Response	XSF:[Data]						
	Request	QSF	0 1 2 3	Scene1 Scene2 Full Auto –				
	Response	OSF:[Data]						

※1 There are two type of command type "ptz" is Pan-Tilt head Control and "cam" is for camera control

※2 When switching scene, update notification of each command belonging to the scene wii be sent

項目	コマンド	項目	コマンド
Scene	XSF:[Data]	Auto F.Mix Max Gain	OSE:74:[Data]
Iris Mode	ORS:[Data]	Chroma Level	OCG:[Data]
Iris Mode	d31[Data]	White Balance Mode	OAW:[Data]
Picture Level	OSD:48:[Data]	R Gain	OSG:39:[Data]
AGC Max Gain	OSD:69:[Data]	B Gain	OSG:3A:[Data]
Shutter Mode	OSJ:03:[Data]	Pedestal	OSJ:0F:[Data]
Slow Shutter	OSJ:80:[Data]	Detail	ODT:[Data]
Step VAL	OSJ:06:[Data]	Contrast	OSD:50:[Data]
Synchro VAL	OSJ:09	DRS	OSE:33:[Data]
Gain	OGU:[Data]	Back Light COMP.	OSE:73:[Data]
Frame Mix	OSA:65:[Data]	DNR	OSD:3A:[Data]

Brightness

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Picture Level	Control	OSD:48:[Data]	2Eh	-4	cam	OSD:48:[Data]	OSD:48:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSD:48:32&res=1
	Response	OSD:48:[Data]	–	–				
	Request	QSD:48	32h	0				
	Response	OSD:48:[Data]	–	–				
			36h	4				
AGC Max Gain	Control	OSD:69:[Data]	04	24dB	cam	OSD:69:[Data]	OSD:69:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSD:69:04&res=1
	Response	OSD:69:[Data]	05	30dB				
	Request	QSD:69	06	36dB				
	Response	OSD:69:[Data]	07	42dB				
Slow Shutter	Control	OSJ:80:[Data]	0	Off	cam	OSJ:80:[Data]	OSJ:80:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:80:1&res=1
	Response	OSJ:80:[Data]	1	On				■On mode [50Hz] 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/16000 [59.94Hz/60Hz] 1/1, 1/2, 1/3, 1/7, 1/15, 1/30, 1/60, 1/120, 1/240, 1/480, 1/1000, 1/2000, 1/4000, 1/8000, 1/16000 ■Off mode [50Hz] 1/50, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/16000 [59.94Hz/60Hz] 1/60, 1/120, 1/240, 1/480, 1/1000, 1/2000, 1/4000, 1/8000, 1/16000
	Request	QSJ:80						
	Response	OSJ:80:[Data]						
Iris Mode	Control	ORS:[Data]	0	Manual	cam	ORS:[Data]	ORS:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=ORS:1&res=1
	Response	ORS:[Data]	1	Auto				
	Request	QRS						
	Response	ORS:[Data]						
Iris Mode	Control	#D3[Data]	0	Manual	ptz	d3[Data]	d3[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23D30&res=1
	Response	d3[Data]	1	Auto				
	Request	#D3						
	Response	d3[Data]						
Shutter Mode	Control	OSJ:03:[Data]	0h	Off	cam	OSJ:03:[Data]	OSJ:03:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:03:1&res=1
	Response	OSJ:03:[Data]	1h	Step				
	Request	QSJ:03	2h	Synchro				
	Response	OSJ:03:[Data]						
Step INC	Control	OSJ:04:[Data]	01h	1	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:04:01&res=1 Increase [Data] stage among selectable Shutter Steps Update notification of OSJ:06 is sent
	Response	OSJ:04:[Data]	–	—				
	Request	–	64h	100				
	Response	–						
Step DEC	Control	OSJ:05:[Data]	01h	1	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:05:01&res=1 Decrease [Data] stage among selectable Shutter Steps Update notification of OSJ:06 is sent
	Response	OSJ:05:[Data]	–	—				
	Request	–	64h	100				
	Response	–						

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Step VAL	Control	OSJ:06:[Data]	0001h ~ 3E80h	1/1 ~ 1/16000	cam	OSJ:06:[Data]	OSJ:06:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:06:003C&res=1 Except for the effective shutter speed, respond with ER3 ▼50Hz 0001h 1/1 0002h 1/2 0003h 1/3 0006h 1/6 000Ch 1/12 0019h 1/25 0032h 1/50 0064h 1/100 00FAh 1/250 01F4h 1/500 03E8h 1/1000 07D0h 1/2000 0FA0h 1/4000 1F40h 1/8000 3E80h 1/16000 ▼59.94/60Hz 0001h 1/1 0002h 1/2 0003h 1/3 0007h 1/7 000Fh 1/15 001Eh 1/30 003Ch 1/60 0078h 1/120 00F0h 1/240 01E0h 1/480 03E8h 1/1000 07D0h 1/2000 0FA0h 1/4000 1F40h 1/8000 3E80h 1/16000
	Response	OSJ:06:[Data]						
	Request	QSJ:06						
	Response	OSJ:06:[Data]						
Synchro INC	Control	OSJ:07:[Data]	01h ~ 64h	1 ~ 100	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:07:01&res=1 Increase [Data] stage among selectable Shutter Steps Update notification of OSJ:09 is sent
	Response	OSJ:07:[Data]						
	Request	–						
	Response	–						
Synchro DEC	Control	OSJ:08:[Data]	01h ~ 64h	1 ~ 100	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:08:01&res=1 Decrease [Data] stage among selectable Shutter Steps Update notification of OSJ:09 is sent
	Response	OSJ:08:[Data]						
	Request	–						
	Response	–						
Synchro VAL	Control	OSJ:09:[Data]	001F4h ~ 019C8h	50.0[Hz] ~ 660.0[Hz]	cam	OSJ:09:[Data]	OSJ:09:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:09:00258&res=1 Except for the effective shutter speed, round down ・System Frequency : 50Hz 50.0Hz～570.1Hz ・System Frequency : 59.94Hz / 60Hz 60.0Hz～660.0Hz
	Response	OSJ:09:[Data]						
	Request	QSJ:09						
	Response	OSJ:09:[Data]						
Gain	Control	OGU:[Data]	08h ~ 11h ~ 1Ah ~ 32h 80h	0dB ~ 9dB ~ 18dB ~ 42dB Auto	cam	OGU:[Data]	OGU:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OGU:08&res=1 step:3dB
	Response	OGU:[Data]						
	Request	QGU						
	Response	OGU:[Data]						

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Frame Mix	Control	OSA:65:[Data]	00h 06h 0Ch 12h 18h 80h	Off +6dB +12dB +18dB +24dB Auto	cam	OSA:65:[Data]	OSA:65:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSA:65:00&res=1
	Response	OSA:65:[Data]						
	Request	QSA:65						
	Response	OSA:65:[Data]						
Auto F.Mix Max Gain	Control	OSE:74[Data]	00 01 02 03	(Off) 6dB 12dB 18dB	cam	OSE:74:[Data]	OSE:74:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:74:01&res=1
	Response	OSE:74[Data]						
	Request	QSE:74						
	Response	OSE:74[Data]						

Picture

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Chroma Level	Control	OCG:[Data]	03h 04h 05h 06h 07h 08h 09h 0Ah 0Bh 0Ch 0Dh	0 1 2 3 4 5 6 7 8 9 10	cam	OCG:[Data]	OCG:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OCG:08&res=1
	Response	OCG:[Data]						
	Request	QCG						
	Response	OCG:[Data]						
White Balance Mode	Control	OAW:[Data]	0 1 2 3 4 5	ATW AWC A AWC B ––– PRESET 3200K PRESET 5600K	cam	OAW:[Data]	OAW:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OAW:1&res=1 ATW variable range is from 2800k to 6500K
	Response	OAW:[Data]						
	Request	QAW	0 1 2 3 4 5	ATW ––– AWC A AWC B PRESET 3200K PRESET 5600K				
	Response	OAW:[Data]						
AWB	Control	OWS	–	–	cam	OWS ER3:OWS	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OWS&res=1 See Chapter 6 for AWB execution sequence
	Response	OWS						
	Request	–						
	Response	–						
ABB	Control	OAS	–	–	cam	ER3:OAS	–	UE20/HE20 does not ABB function, ABB cannot be executed and can not get return errors
	Response	OAS						
	Request	–						
	Response	–						
R Gain	Control	OSG:39:[Data]	7E2h – 800h – 81Eh	–30 – 0 – 30	cam	OSG:39:[Data]	OSG:39:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSG:39:800&res=1
	Response	OSG:39:[Data]						
	Request	QSG:39						
	Response	OSG:39:[Data]						
B Gain	Control	OSG:3A:[Data]	7E2h – 800h – 81Eh	–30 – 0 – 30	cam	OSG:3A:[Data]	OSG:3A:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSG:3A:800&res=1
	Response	OSG:3A:[Data]						
	Request	QSG:3A						
	Response	OSG:3A:[Data]						
Pedestal	Control	OSJ:0F:[Data]	7F6h – 800h – 80Ah	–10 – 0 – +10	cam	OSJ:0F:[Data]	OSJ:0F:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:0F:800&res=1
	Response	OSJ:0F:[Data]						
	Request	QSJ:0F						
	Response	OSJ:0F:[Data]						
Detail	Control	ODT:[Data]	0 1 2 3	0 1 2 3	cam	ODT:[Data]	ODT:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=ODT:1&res=1
	Response	ODT:[Data]						
	Request	QDT						
	Response	ODT:[Data]						
Contrast	Control	OSD:50:[Data]	0 1 2 3 4	0 1 2 3 4	cam	OSD:50:[Data]	OSD:50:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSD:50:1&res=1
	Response	OSD:50:[Data]						
	Request	QSD:50						
	Response	OSD:50:[Data]						
DRS	Control	OSE:33:[Data]	0 1	Off On	cam	OSE:33:[Data]	OSE:33:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:33:1&res=1
	Response	OSE:33:[Data]						
	Request	QSE:33						
	Response	OSE:33:[Data]						

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Back Light COMP.	Control	OSE:73:[Data]	0	Off	cam	OSE:73:[Data]	OSE:73:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:73:1&res=1
	Response	OSE:73:[Data]	1	On				
	Request	QSE:73						
	Response	OSE:73:[Data]						
DNR	Control	OSD:3A:[Data]	00	Off	cam	OSD:3A:[Data]	OSD:3A:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSD:3A:01&res=1
	Response	OSD:3A:[Data]	01	Low				
	Request	QSD:3A	02	High				
	Response	OSD:3A:[Data]						

System

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Frequency	Control	OSE:77:[Data]	0	59.94Hz	cam	OSE:77:[Data]	OSE:77:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:77:1&res=1
	Response	OSE:77:[Data]	1	50Hz				Reboot after changing Frequency
	Request	QSE:77	4	60Hz				
	Response	OSE:77:[Data]						
Format	Control	OSA:87:[Data]	0h	720/60p	cam	OSA:87:[Data]	OSA:87:0x[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSA:87:1&res=1
	Response	OSA:87:[Data]	1h 2h 3h 4h 5h 10h	720/59.94p 720/50p 1080/60i 1080/59.94i 1080/50i 1080/59.94p				【UE20】 [50Hz] 2160/25p, 1080/50p, 1080/50i, 1080/25p, 720/50p [59.94Hz] 2160/29.97p, 1080/59.94p, 1080/59.94i, 1080/29.97p, 720/59.94p [60Hz]
	Request	QSA:87	11h 14h 15h 17h 18h	1080/50p 1080/29.97p 1080/25p 2160/29.97p 2160/25p				2160/30p, 1080/60p, 1080/60i, 1080/30p, 720/60p ※In the case that Priority Mode is "4K", Format is 2160/25p, 2160/29.97p, 2160/30p according to Frequency 【HE20】 [50Hz]
	Response	OSA:87:[Data]	20h 24h 25h	1080/60p 2160/30p 1080/30p				1080/50p, 1080/50i, 1080/25p, 720/50p, [59.94Hz] 1080/59.94p, 1080/59.94i, 1080/29.97p, 720/59.94p, [60Hz] 1080/60p, 1080/60i, 1080/30p, 720/60p,
TALLY Enable	Control	#TAE[Data]	0	Disable	ptz	tAE[Data]	tAE[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23TAE1&res=1
	Response	tAE[Data]	1	Enable				
	Request	#TAE						
	Response	tAE[Data]						
Tally Control	Control	#DA[Data]	0	OFF	ptz	dA[Data]	dA[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23DA1&res=1
	Response	dA[Data]	1	ON				
	Request	#DA						
	Response	dA[Data]						
Tally Information	Control	−	[Data1] 0 1	[Data1] Tally LED Off Tally LED On	ptz	tAA[Data1][Data2][Data3][Data4][Data5][Data6][Data7][Data8][Data9]	tAA[Data1][Data2][Data3][Data4][Data5][Data6][Data7][Data8][Data9]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23TAA&res=1
	Response	−	[Data2] 0 [Data3] 0 1	[Data2] Reserved [Data3] Command(#DA) Off Command(#DA) On				When #DA and #TAE change, if #TAA also changes, an update notification is sent
	Request	#TAA	[Data4] 0 [Data5] 0 [Data6] 0 [Data7] 0	[Data4] Reserved [Data5] Reserved [Data6] Reserved [Data7] Reserved				
	Response	tAA[Data1][Data2][Data3][Data4][Data5][Data6][Data7][Data8][Data9]	[Data8] 0 [Data9] 0	[Data8] Reserved [Data9] Reserved				
Status Lamp	Control	#LMP[Data]	0	Disable	ptz	lMP[Data]	−	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23LMP0&res=1
	Response	lMP[Data]	1	Enable				
	Request	#LMP						
	Response	lMP[Data]						
Wireless ID	Control	#RID[Data]	0	01	ptz	rID[Data]	rID[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23RID1&res=1
	Response	rID[Data]	1	02				
	Request	#RID	2	03				
	Response	rID[Data]	3	04				

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Wireless Control	Control	#WLC[Data1]	0	Disable	ptz	wLC[Data1]	wLC[Data1]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23WLC1&res=1
	Response	wLC[Data1]	1	Enable				
	Request	#WLC						
	Response	wLC[Data1]						
OSD Off With TALLY	Control	OSE:75:[Data]	0	OFF	cam	OSE:75:[Data]	OSE:75:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:75:1&res=1
	Response	OSE:75:[Data]	1	ON				
	Request	QSE:75						
	Response	OSE:75:[Data]						
COLORBAR/CAMERA	Control	DCB:[Data]	0	Camera	cam	DCB:[Data]	OBR:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=DCB:1&res=1
	Response	DCB:[Data]	1	Color Bar				
	Request	QBR						
	Response	OBR:[Data]						
Audio	Control	OSA:D0:[Data]	0	OFF	cam	OSA:D0:[Data]	OSA:D0:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSA:D0:1&res=1
	Response	OSA:D0:[Data]	1	ON				
	Request	QSA:D0						
	Response	OSA:D0:[Data]						
Audio Input Type	Control	OSA:D1:[Data]	0	Mic	cam	OSA:D1:[Data]	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSA:D1:0&res=1
	Response	OSA:D1:[Data]	3	Line				
	Request	QSA:D1						
	Response	OSA:D1:[Data]						
Audio Volume Level	Control	OSA:D5:[Data1]:[Data2]	[Data1] 0	[Data1] CH1	cam	OSA:D5:[Data1]:[Data2]	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSA:D5:0:5C&res=1 Step:3dB
	Response	OSA:D5:[Data1]:[Data2]	[Data2] 5Ch – 80h – 8Ch	[Data2] –36dB – 0dB – 12dB				
	Request	QSA:D5:[Data1]						
	Response	OSA:D5:[Data1]:[Data2]						
Audio Plugin Power	Control	OSA:D2:[Data]	0	Off	cam	OSA:D2:[Data]	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSA:D2:0&res=1
	Response	OSA:D2:[Data]	1	On				
	Request	QSA:D2						
	Response	OSA:D2:[Data]						
Serial Com. Protocol	Control	OVP:02:[Data]	0	Panasonic	cam	OSA:D2:[Data]	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OVP:02:1&res=1
	Response	OVP:02:[Data]	1	Standard				
	Request	QVP:02						
	Response	OVP:02:[Data]						
Connector Select	Control	OVP:03:[Data]	0	RS422	cam	OSA:D2:[Data]	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OVP:03:1&res=1
	Response	OVP:03:[Data]	1	RS232C				
	Request	QVP:03						
	Response	OVP:03:[Data]						
Baud Tate	Control	OVP:04:[Data]	0	9600bps	cam	OSA:D2:[Data]	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OVP:04:1&res=1
	Response	OVP:04:[Data]	1	38400bps				
	Request	QVP:04						
	Response	OVP:04:[Data]						
Camera Address	Control	OVP:05:[Data]	0 1 2 3 4 5 6 7	Auto 1 2 3 4 5 6 7	cam	OSA:D2:[Data]	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OVP:05:1&res=1
	Response	OVP:05:[Data]						
	Request	QVP:05						
	Response	OVP:05:[Data]						

Maintenance

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Langage	Control	OSJ:82:[Data]	0 1 2	English Japanease Chinese	cam	OSJ:82:[Data]	OSJ:82:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:82:1&res=1
	Response	OSJ:82:[Data]						
	Request	QSJ:82						
	Response	OSJ:82						
SOFTWARE VERSION	Control	–	–	VXX.XX example: V01.06	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=QSV&res=1
	Response	–						
	Request	QSV						
	Response	OSV:[Data1]						

OSD

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
MENU	Control	DUS:[Data]	0	Off	cam	–	OUS:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=DUS:1&res=1
	Response	DUS:[Data]	1	On				
	Request	QUS						
	Response	OUS:[Data]						
MENU SW	Control	DPG:[Data]	1	Cancel	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=DPG&res=1
	Response	DPG:[Data]						
	Request	–						
	Response	–						
ITEM SW	Control	DIT:[Data]	1	Enter	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=DIT&res=1
	Response	DIT:[Data]						
	Request	–						
	Response	–						
YES SW	Control	DUP:[Data]	1	Up	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=DUP&res=1
	Response	DUP:[Data]						
	Request	–						
	Response	–						
NO SW	Control	DDW:[Data]	1	Down	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=DDW&res=1
	Response	DDW:[Data]						
	Request	–						
	Response	–						
RIGHT SW	Control	DRT:[Data]	1	Right	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=DRT&res=1
	Response	DRT:[Data]						
	Request	–						
	Response	–						
LEFT SW	Control	DLT:[Data]	1	Left	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=DLT&res=1
	Response	DLT:[Data]						
	Request	–						
	Response	–						

Pan/Tilt

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Install Positon	Control	#INS[Data]	0	Desktop	ptz	iNS[Data]	iNS[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23INS1&res=1
	Response	#INS[Data]	1	Hanging				
	Request	#INS						
	Response	iNS[Data]						
Speed With Zoom Position	Control	#SWZ[Data]	0	Off	ptz	sWZ[Data]	sWZ[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23SWZ1&res=1
	Response	sWZ[Data]	1	On				
	Request	#SWZ						
	Response	sWZ[Data]						
Focus Adjust With PTZ.	Control	OAZ:[Data]	0	Off	cam	OAZ:[Data]	OAZ:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OAZ:0&res=1
	Response	OAZ:[Data]	1	On				
	Request	QAZ						
	Response	OAZ:[Data]						
Pan/Tilt Absolute Position Control	Control	#APC[Data1][Data2]	[Data1] 2F69h – 8000h – D097h [Data2] 5555h – 8000h – 8E38h	[Data1]Pan Position Right Limit(±170°) – Center – Left Limit(±170°) [Data2]Tilt Position Up Limit(+90°) – Center – Down Limit(-30°)	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23APC80008000&res=1
	Response	aPC[Data1][Data2]						
	Request	–						
	Response	–						
Pan Speed Control	Control	#P[Data]	01 – 50 – 99	Left Max. Speed – Pan Stop – Right Max. Speed	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23P70&res=1
	Response	pS[Data]						
	Request	–						
	Response	–						
Tilt Speed Control	Control	#T[Data]	01 – 50 – 99	Down Max. Speed – Tilt Stop – Up Max. Speed	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23T70&res=1
	Response	tS[Data]						
	Request	–						
	Response	–						
Pan Tilt Speed Control	Control	#PTS[Data1][Data2]	[Data1] 01 – 50 – 99 [Data2] 01 – 50 – 99	[Data1] Left Max. Speed – Pan Stop – Right Max. Speed [Data2] Down Max. Speed – Tilt Stop – Up Max. Speed	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23PTS7070&res=1
	Response	pTS[Data1][Data2]						
	Request	–						
	Response	–						
Limitation Control	Control	#LC[Data1][Data2]	[Data1] 1 2 3 4 [Data2] 0 1	[Data1] Tilt Up Tilt Down Pan Left Pan Right [Data2] Release Set	ptz	IC[Data1][Data2]	IC1[Data2] IC2[Data2] IC3[Data2] IC4[Data2]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23LC11&res=1
	Response	IC[Data1][Data2]						
	Request	#LC[Data1]						
	Response	IC[Data1][Data2]						

Lens

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Focus Mode	Control	OAF:[Data]	0	Manual	cam	OAF:[Data]	OAF:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OAF:0&res=1
	Response	OAF:[Data]	1	Auto				
	Request	QAF						
	Response	OAF:[Data]						
Focus Mode	Control	#D1[Data]	0	Manual	ptz	d1[Data]	d1[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23D10&res=1
	Response	d1[Data]	1	Auto				
	Request	#D1						
	Response	d1[Data]						
Digital Zoom	Control	OSE:70:[Data]	0	Disable	cam	OSE:70:[Data]	OSE:70:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:70:1&res=1
	Response	OSE:70:[Data]	1	Enable				[Zoom Mode] 　-Opt Zoom 　　OSE:70:0 　　OSD:B3:0 　-i Zoom 　　OSE:70:0 　　OSD:B3:1 　-D Zoom 　　OSE:70:1 　　OSD:B3:0
	Request	QSE:70						
	Response	OSE:70:[Data]						
i.zoom	Control	OSD:B3:[Data]	0	Disable	cam	OSD:B3:[Data]	OSD:B3:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSD:B3:0&res=1
	Response	OSD:B3:[Data]	1	Enable				
	Request	QSD:B3						
	Response	OSD:B3:[Data]						
Max Digital Zoom	Control	OSE:7A:[Data]	02	x2	cam	OSE:7A:[Data]	OSE:7A:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:7A:03&res=1
	Response	OSE:7A:[Data]	03	x3				
	Request	QSE:7A	04	x4				
	Response	OSE:7A:[Data]						
Digital Extender	Control	OSJ:4E:[Data]	0	OFF	cam	OSJ:4E:[Data]	OSJ:4E:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSJ:4E:1&res=1
	Response	OSJ:4E:[Data]	1	x1.4				
	Request	QSJ:4E	2	x2.0				
	Response	OSJ:4E:[Data]						
Zoom Position Control	Control	#AXZ[Data]	555h	Wide	ptz	–	axz[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23AXZ555&res=1
	Response	axz[Data]	–	–				
	Request	#AXZ	FFFh	Tele				
	Response	axz[Data]						
Request Zoom Position	Control	–	555h	Wide	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23GZ&res=1
	Response	–	–	–				
	Request	#GZ	FFFh	Tele				
	Response	gz[Data]	"---"	@Power OFF				
Zoom Speed Control	Control	#Z[Data]	01	Wide Max. Speed	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23Z70&res=1
	Response	zS[Data]	–	–				
	Request	–	50	Zoom Stop				
	Response	–	99	Tele Max. Speed				
Digital Zoom Magnification	Control	OSE:76:[Data]	0100	x1.00	cam	OSE:76:[Data]	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:76:0100&res=1
	Response	OSE:76:[Data]	–	–				
	Request	QSE:76	0400	x4.00				
	Response	OSE:76:[Data]						
Focus Position Control	Control	#AXF[Data]	555h	Near	ptz	–	axf[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23AXF555&res=1
	Response	axf[Data]	–	–				
	Request	#AXF	FFFh	Far				
	Response	axf[Data]						
Request Focus Position	Control	–	555h	Near	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23GF&res=1
	Response	–	–	–				
	Request	#GF	FFFh	Far				
	Response	gf[Data]	"---"	@Power OFF				

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Focus Speed Control	Control	#F[Data]	01 – 49 50 51 – 99	Near Max. Speed – Near Min. Speed Stop Far Min. Speed – Far Max. Speed	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23F50&res=1
	Response	fS[Data]						
	Request	–						
	Response	–						
Push Auto Focus	Control	OSE:69:[Data]	1	Push Auto	cam	–	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:69:1&res=1
	Response	OSE:69:[Data]						
	Request	–						
	Response	–						
Iris Control	Control	#AXI[Data]	555h – FFFh	Iris Close – Iris Open	ptz	–	axi[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23AXI555&res=1
	Response	axi[Data]						
	Request	#AXI						
	Response	axi[Data]						
Iris Control	Control	#I[Data]	01 – 99	Iris Close – Iris Open	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23I50&res=1
	Response	iC[Data]						
	Request	#I						
	Response	iC[Data]						
Iris Control	Control	ORV:[Data]	000h – 3FFh	Iris Close – Iris Open	cam	ORV:[Data]	–	http://192.168.0.10/cgi-bin/aw_cam?cmd=ORV:000&res=1
	Response	ORV:[Data]						
	Request	QRV						
	Response	ORV:[Data]						
Request Iris Position	Control	–	[Data1] 555h – FFFh "---" [Data2] 0 1	[Data1] Close – Open @Power OFF [Data2] Manual Iris Auto Iris	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23GI&res=1
	Response	–						
	Request	#GI						
	Response	gi[Data1][Data2]						
Request Iris F No.	Control	–	0Eh – 1Ch – 38h – A0h – FFh	F1.4 – F2.8 – F5.6 – F16 – CLOSE	cam	–	OIF:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=QIF&res=1
	Response	–						
	Request	QIF						
	Response	OIF:[Data]						
Iris Follow	Control	–	00h – FFh	Iris Close – Iris Open	cam	–	OSD:4F:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=QSD:4F&res=1
	Response	–						
	Request	QSD:4F						
	Response	OSD:4F:[Data]						
Lens Position Information Control	Control	#LPC[Data]	0 1	Off On	ptz	IPC[Data]	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23LPC1&res=1
	Response	IPC[Data]						
	Request	#LPC						
	Response	IPC[Data]						
Lens Position Information	Control	–	[Data1] 555h – FFFh [Data2] 555h – FFFh [Data3] 555h – FFFh	[Data1]Zoom Position Wide – Tele [Data2]Focus Position Near – Far [Data3]Iris Position Close – Open	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23LPI&res=1
	Response	–						
	Request	#LPI						
	Response	IPI[Data1][Data2][Data3]						

Preset

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Preset Speed Table	Control	#PST[Data]	0 2	Slow Fast	ptz	pST[Data]	pST[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23PST0&res=1
	Response	pST[Data]						
	Request	#PST						
	Response	pST[Data]						
Preset Speed	Control	#UPVS[Data]	000 250 ~ 999	30 : MaxSpeed 1 : Slow ~ 30 : Fast	ptz	uPVS[Data]	uPVS[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23UPVS250&res=1 001-275:1 276-301:2 302-327:3 328-353:4 354-379:5 380-404:6 405-430:7 431-456:8 457-482:9 483-508:10 509-534:11 535-559:12 560-585:13 586-611:14 612-637:15 638-663:16 664-689:17 690-714:18 715-740:19 741-766:20 767-792:21 793-818:22 819-844:23 845-869:24 870-895:25 896-921:26 922-947:27 948-973:28 974-998:29 999,000:30
	Response	uPVS[Data]						
	Request	#UPVS						
	Response	uPVS[Data]						
Preset Scope	Control	OSE:71:[Data]	0 1 2	MODE A MODE B MODE C	cam	OSE:71:[Data]	OSE:71:[Data]	http://192.168.0.10/cgi-bin/aw_cam?cmd=OSE:71:0&res=1
	Response	OSE:71:[Data]						
	Request	QSE:71						
	Response	OSE:71:[Data]						
Save Preset Memory	Control	#M[Data]	00 ~ 99	Preset001 ~ Preset100	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23M00&res=1
	Response	s[Data]						
	Request	–						
	Response	–						
Recall Preset Memory	Control	#R[Data]	00 ~ 99	Preset001 ~ Preset100	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23R00&res=1
	Response	s[Data]						
	Request	–						
	Response	–						
Preset completion notification	Control	–	00 ~ 99	Preset001 ~ Preset100	ptz	q[Data]	–	
	Response	q[Data]						
	Request	–						
	Response	–						
Delete Preset Memory	Control	#C[Data]	00 ~ 99	Preset001 ~ Preset100	ptz	–	–	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23C00&res=1
	Response	s[Data]						
	Request	–						
	Response	–						
Request Latest Recall Preset No.	Control	–	00 ~ 99	Preset001 ~ Preset100	ptz	s[Data]	s[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23S&res=1
	Response	–						
	Request	#S						
	Response	s[Data]						

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
Preset Entry Confirmation	Control	–	[Data1] 00h – 02h	[Data1] multiple (each 40 Presert No)	ptz	pE[Data1][Data2]	pE00[Data2] pE01[Data2] pE02[Data2]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23PE00&res=1
	Response	–	[Data2] 0000000000h – FFFFFFFFFFh	[Data2] PRESET No. (Data1*40 + 1)				
	Request	#PE[Data1]	(bit0) 0 1 (bit1) 0 1 – (39bit) 0 1	No Entry Entry PRESET No. (Data1*40 + 2) No Entry Entry – PRESET No. (Data1*40 + 40) No Entry Entry				
	Response	pE[Data1][Data2]						

See Chapter 6 for preset sequence

Others

Command name	Category	Command	Data value	Setting	Command type	Update notification	camdata.html	Usage example / Remarks
MODEL NUMBER	Control	−		AW-UE20 / AW-HE20	cam	−	OID:AW-UE20 OID:AW-HE20	http://192.168.0.10/cgi-bin/aw_cam?cmd=QID&res=1
	Response	−						
	Request	QID						
	Response	OID:[Data]						
PowerON, Standby	Control	#O[Data]	0 1	Standby PowerOn	ptz	p[Data]	p[Data]	http://192.168.0.10/cgi-bin/aw_ptz?cmd=%2300&res=1
	Response	p[Data]						
	Request	#O						
	Response	p[Data]						