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POVCAM
Interface Specifications
Menu / Camera Operation

Version 1.0

Panasonic Corporation

Change History

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1. Introduction

This document describes the specifications for menu settings and camera operation when operating a memory card portable recorder and special optional compact camera head via the network. For details on general operation, see the instruction manual.

There is some compatibility with HD integrated cameras in terms of the command system.

A memory card portable recorder also supports external operation via the network for some functions. Please substitute "camera" with "recorder" in such cases when reading this document.

Applicable models

- AG-UCK20/AG-UMR20 series and AG-MDC20/AG-MDR25 series

2. Configuration outline

This manual has the following general configuration.

① Control using commands

Functions such as zoom and iris/focus can be controlled.

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.

② Camera 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.

③ Camera 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.

④ Error 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.

3. Control using commands

Command control using `aw_ptz` and command control using `aw_cam` are available. With the HD Integrated Camera series, command control was divided into pan-tilt head control and camera control, but with the POVCAM series, control is performed with `aw_ptz` for any control command beginning with `#` and with `aw_cam` for any other command.

There are restrictions on the functions/commands that can be used depending on the state on the POVCAM side. For details, see the instruction manual.

3.1. Command Specifications (`aw_ptz`)

The command specifications (`aw_ptz`) conform to the HTTP1.1 communication specifications. Their format is given below.

[Command format]

[Send]

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

- * **IP Address** IP address of camera that is connection destination
- * **Command** Details given in "Command" column in the command tables below
- * **Type** Fixed to "1"

[Receive]

200 OK "Command"

- * **Command** Response value of each command; set in the HTTP message body.

Example) Zoom (Tele side)

[Send]

http://192.168.0.10/cgi-bin/aw_ptz?cmd=#Z65&res=1

[Receive]

200 OK "zS65"

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

http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23Z65&res=1

3.2. Command Specifications (aw_cam)

The camera control commands conform to the HTTP1.1 communication specifications. Their format is given below.

[Command format]

[Send]

`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 the command tables below
- * **Type**..... Normally "1" (but "0" for the AWB[OWS] and ABB[OAS] commands)

[Receive]

200 OK "**Command**"

- * **Command**..... Response value of each command; described in the HTTP message body.

Example: Focus setting = Manual

[Send]

http://192.168.0.10/cgi-bin/aw_cam?cmd=OAF:0&res=1

[Receive] The response is the HTTP response.

200 OK "**OAF:0**"

Given below is the communication sequence which accords with the command format presented on the previous page.

[Sequence]

“PC1” is the control terminal in the sequence below.

Example) Zoom (Tele side)

Camera IP Address = 192.168.0.10

Command = #Z65

Zoom operation control is performed from PC1. [200 OK “zS65”] is returned as the response from the camera.

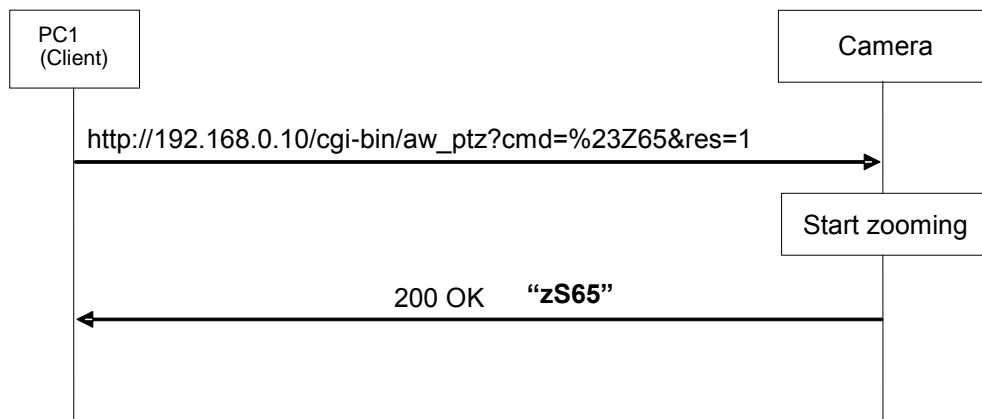


Figure 3.1-1 Command specifications (aw_ptz) sequence

The command specifications (aw_cam) also have the same sequence.

When issuing commands in succession, send the commands with a gap of 130 ms between each command.

3.3. Scene File Control

Some items in the [SCENE FILE] menu for scene files can be controlled externally when using the AG-UCK20 or MDC20. For the MENU values in the Data value column, see the values enclosed in parentheses.

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[SELECT SCENE]	XSF:[Data]	XSF: [Data]	QSF	OSF:[Data]	Control [XSF] 1h (F1:) 2h (F2:) 3h (F3:) 4h (AUTO) Query [QSF] 0h (F1:) 1h (F2:) 2h (F3:) 3h (AUTO)	Not supported
[DETAIL LEVEL]	OSA:30:[Data]	OSA:30:[Data]	QSA:30	OSA:30:[Data]	76h(-10) ~ 80h(0) ~ 8Ah(+10)	Not supported
[V DETAIL LEVEL]	OSD:16:[Data]	OSD:16:[Data]	QSD:16	OSD:16:[Data]	00h(-7) ~ 07h(0) ~ 0Eh(+7)	Not supported
[DETAIL CORING]	OSK:01:[Data]	OSK:01:[Data]	QSK:01	OSK:01:[Data]	80h (0) ~ 94h (+20)	Not supported
[SKIN TONE DTL]	OSE:32:[Data]	OSE:32:[Data]	QSE:32	OSE:32:[Data]	0(OFF) 1(LOW) 3(HIGH)	Not supported
[WB R GAIN]	ORG:[Data]	ORG:[Data]	QGR	OGR:[Data]	00h(-30) ~ 1Eh(0) ~ 3Ch(+30)	Not supported
[WB B GAIN]	OBG:[Data]	OBG:[Data]	QGB	OGB:[Data]	00h(-30) ~ 1Eh(0) ~ 3Ch(+30)	Not supported
[CHROMA LEVEL]	OSK:02:[Data]	OSK:02:[Data]	QSK:02	OSK:02:[Data]	3Ah(-70) ~ 80h(0) ~ 9Eh(+30)	Not supported
[CHROMA PHASE]	OSK:03:[Data]	OSK:03:[Data]	QSK:03	OSK:03:[Data]	V1.00 62h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
[MATRIX]	OSE:31:[Data]	OSE:31:[Data]	QSE:31	OSE:31:[Data]	0h(NORM), 1h(CINE-LIKE), 2h(STILL-LIKE), 3h(SURGICAL LIGHT)*onlyMDC2 0	Not supported
[COLOR CORRECTION SETTING]	-	-	-	-	* See the separate sheet.	Not supported

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[MASTER PED]	OTD:[Data]	OTD:[Data]	QTD	OTD:[Data]	0Fh(-15) ~ 1Eh(0) ~ 2Dh(+15)	Not supported
[GAMMA]	OSE:72:[Data]	OSE:72:[Data]	QSE:72	OSE:72:[Data]	1h(HD NORM) 2h(CINE-LIKE D) 3h(STILL-LIKE)	Not supported
[BLACK GAMMA]	OSK:04:[Data]	OSK:04:[Data]	QSK:04	OSK:04:[Data]	79h(-7) ~ 80h(0) ~ 87h(+7)	Not supported
[KNEE]	OSA:2D:[Data]	OSA:2D:[Data]	QSA:2D	OSA:2D:[Data]	2h(AUTO) 3h(LOW) 4h(MID) 5h(HIGH)	Not supported
[DRS]	OSE:33:[Data]	OSE:33:[Data]	QSE:33	OSE:33:[Data]	0h(OFF) 1h(LOW) 2h(MID) 3h(HIGH)	Not supported
[NR CONTROL]	OSK:05:[Data]	OSK:05:[Data]	QSK:05	OSK:05:[Data]	79h(-7) ~ 80h(0) ~ 87h(+7)	Not supported

Usage example:

- Set [SELECT SCENE] for scene selection to "F1:".

[Control] PC → CAM

http://192.168.0.10/cgi-bin/aw_cam?cmd=XSF%3A1&res=1

[Response] CAM → PC

200 OK "XSF:1"

- Query about the [MATRIX] setting for the matrix.

[Query] PC → CAM

http://192.168.0.10/cgi-bin/aw_cam?cmd=QSE%3A31&res=1

[Response] CAM → PC

200 OK "OSE:31:1"

* When CINE-LIKE

3.3.1. Separate Table: Color Correction Settings

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
Mg(SAT)	OSD:82:[Data]	OSD:82:[Data]	QSD:82	OSD:82:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
Mg(PHASE)	OSD:83:[Data]	OSD:83:[Data]	QSD:83	OSD:83:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
Mg_R(SAT)	OSD:84:[Data]	OSD:84:[Data]	QSD:84	OSD:84:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
Mg_R(PHASE)	OSD:85:[Data]	OSD:85:[Data]	QSD:85	OSD:85:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
R(SAT)	OSD:86:[Data]	OSD:86:[Data]	QSD:86	OSD:86:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
R(PHASE)	OSD:87:[Data]	OSD:87:[Data]	QSD:87	OSD:87:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
R_R_YI(SAT)	OSD:9C:[Data]	OSD:9C:[Data]	QSD:9C	OSD:9C:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
R_R_YI(PHASE)	OSD:9D:[Data]	OSD:9D:[Data]	QSD:9D	OSD:9D:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
R_YI_YI(SAT)	OSD:9E:[Data]	OSD:9E:[Data]	QSD:9E	OSD:9E:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
R_YI_YI(PHASE)	OSD:9F:[Data]	OSD:9F:[Data]	QSD:9F	OSD:9F:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
YI(SAT)	OSD:8A:[Data]	OSD:8A:[Data]	QSD:8A	OSD:8A:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
YI(PHASE)	OSD:8B:[Data]	OSD:8B:[Data]	QSD:8B	OSD:8B:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
G(SAT)	OSD:8E:[Data]	OSD:8E:[Data]	QSD:8E	OSD:8E:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
G(PHASE)	OSD:8F:[Data]	OSD:8F:[Data]	QSD:8F	OSD:8F:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
G_Cy(SAT)	OSD:90:[Data]	OSD:90:[Data]	QSD:90	OSD:90:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
G_Cy(PHASE)	OSD:91:[Data]	OSD:91:[Data]	QSD:91	OSD:91:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
Cy(SAT)	OSD:92:[Data]	OSD:92:[Data]	QSD:92	OSD:92:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
Cy(PHASE)	OSD:93:[Data]	OSD:93:[Data]	QSD:93	OSD:93:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
B(SAT)	OSD:96:[Data]	OSD:96:[Data]	QSD:96	OSD:96:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
B(PHASE)	OSD:97:[Data]	OSD:97:[Data]	QSD:97	OSD:97:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
Cy_Cy_B(SAT)	OSD:AA:[Data]	OSD:AA:[Data]	QSD:AA	OSD:AA:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
Cy_Cy_B(PHASE)	OSD:AB:[Data]	OSD:AB:[Data]	QSD:AB	OSD:AB:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
Cy_B_B(SAT)	OSD:AC:[Data]	OSD:AC:[Data]	QSD:AC	OSD:AC:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
Cy_B_B(PHASE)	OSD:AD:[Data]	OSD:AD:[Data]	QSD:AD	OSD:AD:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
B_B_Mg(SAT)	OSD:C0:[Data]	OSD:C0:[Data]	QSD:C0	OSD:C0:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
B_B_Mg(PHASE)	OSD:C1:[Data]	OSD:C1:[Data]	QSD:C1	OSD:C1:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
B_Mg_Mg(SAT)	OSD:C2:[Data]	OSD:C2:[Data]	QSD:C2	OSD:C2:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
B_Mg_Mg(PHASE)	OSD:C3:[Data]	OSD:C3:[Data]	QSD:C3	OSD:C3:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
YI_YI_G(SAT)	OSD:C4:[Data]	OSD:C4:[Data]	QSD:C4	OSD:C4:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
YI_YI_G(PHASE)	OSD:C5:[Data]	OSD:C5:[Data]	QSD:C5	OSD:C5:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported
YI_G_G(SAT)	OSD:C6:[Data]	OSD:C6:[Data]	QSD:C6	OSD:C6:[Data]	61h(-31) ~ 80h(0) ~ 9Fh(+31)	Not supported
YI_G_G(PHASE)	OSD:C7:[Data]	OSD:C7:[Data]	QSD:C7	OSD:C7:[Data]	41h(-63) ~ 80h(0) ~ BFh(+63)	Not supported

3.4. Switch Setting Control

Some items in the [SW SETUP] menu for switch settings can be controlled externally when using the AG-UCK20 or MDC20. For the MENU values in the Data value column, see the values enclosed in parentheses.

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[BACKLIGHT COMPENS.]	OSE:73:[Data]	OSE:73:[Data]	QSE:73	OSE:73:[Data]	0h(OFF) 1h(ON)	Not supported
[SPOTLIGHT COMPENS.]	OSK:09:[Data]	OSK:09:[Data]	QSK:09	OSK:09:[Data]	0h(OFF) 1h(ON)	Not supported
[ND FILTER]	OFT:[Data]	OFT:[Data]	QFT	OFT:[Data]	0h(OFF) 1h(1/4 ND) 2h(1/16 ND) 3h(1/64 ND)	Not supported
[IRIS MODE]	ORS:[Data]	ORS:[Data]	QRS	ORS:[Data]	0(Manual) 1(Auto)	Not supported
[GAIN MODE] [GAIN]	OGU:[Data]	OGU:[Data]	QGU	OGU:[Data]	V1.00 support only 08h(0dB) 09h(1dB) ~ 26h(30dB) 80h(AGC ON)	Not supported
[AGC LIMIT]	OSK:11:[Data]	OSK:11:[Data]	QSK:11	OSK:11:[Data]	01h(3dB) 02h(6dB) 03h(9dB) 04h(12dB) 05h(15dB) 06h(18dB) 07h(21dB) 08h(24dB) 09h(27dB) 0Ah(30dB)	Not supported
[SUPER GAIN]	OSK:12:[Data]	OSK:12:[Data]	QSK:12	OSK:12:[Data]	0h(OFF) 1h(ON)	Not supported
[SUPER GAIN EFFECT]	OSK:13:[Data]	OSK:13:[Data]	QSK:13	OSK:13:[Data]	1h(33dB) 2h(36dB)	Not supported
[SHUTTER MODE] [SHUTTER SPEED]	OSK:08:[Data]	OSK:08:[Data]	QSK:08	OSK:08:[Data]	00h(Auto) FFh(SyncScan) 74h(1/2) 75h(1/3) ~ 8Dh(1/4000) 8Eh(1/8000) * See the separate sheet.	Not supported
[SYNCHRO SCAN]	OMS:[Data]	OMS:[Data]	QMS	OMS:[Data]	* See the separate sheet.	Not supported

Command name <POV CAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[AUTO SLOW SHUTTER LIMIT]	OSK:07:[Data]	OSK:07:[Data]	QSK:07	OSK:07:[Data]	0h(OFF) 1h(1/30) 2h(1/25) 3h(1/24) 4h(1/15) 5h(1/12) 6h(1/8) 7h(1/6) * See the separate sheet.	Not supported
[AUTO SHUTTER LIMIT]	OSD:BF:[Data]	OSD:BF:[Data]	QSD:BF	OSD:BF:[Data]	* See the separate sheet.	Not supported
[AE LEVEL]	OSD:48:[Data]	OSD:48:[Data]	QSD:48	OSD:48:[Data]	00h(-10) ~ 31h(-1) 32h(0) 33h(+1) ~ 64h(+10) *supports only 5 step	Not supported
[WHITE BALANCE MODE]	OAW:[Data]	OAW:[Data]	QAW	OAW:[Data]	0h(ATW) 1h(AWB A) 2h(AWB B) 4h(PRESET 3200K) 5h(PRESET 5600K) 9h(VAR) Eh(ATW_LOCK)	Not supported
[VAR]	OSD:B1:[Data]	OSD:B1:[Data]	QSD:B1	OSD:B1:[Data]	000h(2000K) ~ 078h(15000K) * See the separate sheet.	Not supported
[i.ZOOM]	OSD:B3:[Data]	OSD:B3:[Data]	QSD:B3	OSD:B3:[Data]	0h(OFF) 1h(ON)	Not supported
[D.ZOOM]	ODE:[Data]	ODE:[Data]	QDE	ODE:[Data]	0(OFF) 1(ON)	Not supported
[D.ZOOM RATIO]	OSD:B8:[Data]	OSD:B8:[Data]	QSD:B8	OSD:B8:[Data]	0h(x1.4) 1h(x2.0) 2h(x4.0) 3h(x6.0) 4h(x8.0)	Not supported
[O.I.S.]	OIS:[Data]	OIS:[Data]	QIS	OIS:[Data]	0h(OFF) 1h(ON)	Not supported
[HYBRID O.I.S. MODE]	OSK:15:[Data]	OSK:15:[Data]	QSK:15	OSK:15:[Data]	0h(OFF) 1h(ON)	Not supported
[CUSTOM O.I.S. SETUP]	OSK:14:[Data]	OSK:14:[Data]	QSK:14	OSK:14:[Data]	0h (Standard) 1h (For fixed installation)	Not supported
[FOCUS]	OAF:[Data]	OAF:[Data]	QAF	OAF:[Data]	0h(Manual) 1h(AUTO)	Not supported
[CUSTOM AF STABILITY]	OSK:06:[Data]	OSK:06:[Data]	QSK:06	OSK:06:[Data]	1h(level1) 2h(level2) 3h(level3)	Not supported
[INFRARED REC]	#D6[Data]	d6[Data]	#D6	d6[Data]	0h(OFF) 1h(ON)	Not supported

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[IR REC COLOR]	OSK:16:[Data]	OSK:16:[Data]	QSK:16	OSK:16:[Data]	0h(White) 1h(Green)	Not supported
[SCAN REVERSE]	#INS[Data]	iNS[Data]	#INS	iNS[Data]	0(OFF) 1(ON)	Not supported

Usage example:

- Set [INFRARED REC] for infrared recording to ON.

[Control] PC → CAM

http://192.168.0.10/cgi-bin/aw_ptz?cmd=%23D61&res=1

* The command begins with # so you need to use aw_ptz.

[Response] CAM → PC

200 OK "d61"

- Set [IR REC COLOR] for the infrared recording color to white.

[Control] PC → CAM

http://192.168.0.10/cgi-bin/aw_cam?cmd=OSK%3A16%3A0&res=1

* The command does not begin with # so you need to use aw_cam.

[Response] CAM → PC

200 OK "OSK:16:0"

3.4.1. Separate Table: Shutter Modes / Step Values {OSK:08:[Data]}

The settings differ depending on the value of CamFormat{OSK:20:[Data]}.

CamFormat{OSK:20:[Data]}			
60P/60i	30P	24P	50P/50i/25P
00h:Auto	00h:Auto	00h:Auto	00h:Auto
FFh:SyncScan	FFh:SyncScan	FFh:SyncScan	FFh:SyncScan
74h:1/2	74h:1/2	74h:1/2	74h:1/2
76h:1/4	76h:1/4	75h:1/3	75h:1/3
78h:1/8	78h:1/8	77h:1/6	77h:1/6
7Ah:1/15	7Ah:1/15	79h:1/12	79h:1/12
7Dh:1/30	7Dh:1/30	7Bh:1/24	7Ch:1/25
80h:1/60	7Fh:1/50	7Eh:1/48	7Fh:1/50
81h:1/100	80h:1/60	7Fh:1/50	80h:1/60
82h:1/120	81h:1/100	80h:1/60	81h:1/100
84h:1/180	82h:1/120	81h:1/100	83h:1/125
85h:1/250	84h:1/180	82h:1/120	84h:1/180
86h:1/350	85h:1/250	84h:1/180	85h:1/250
87h:1/500	86h:1/350	85h:1/250	86h:1/350
88h:1/750	87h:1/500	86h:1/350	87h:1/500
89h:1/1000	88h:1/750	87h:1/500	88h:1/750
8Ah:1/1500	89h:1/1000	88h:1/750	89h:1/1000
8Bh:1/2000	8Ah:1/1500	89h:1/1000	8Ah:1/1500
8Ch:1/3000	8Bh:1/2000	8Ah:1/1500	8Bh:1/2000
8Dh:1/4000	8Ch:1/3000	8Bh:1/2000	8Ch:1/3000
8Eh:1/8000	8Dh:1/4000	8Ch:1/3000	8Dh:1/4000
--	8Eh:1/8000	8Dh:1/4000	8Eh:1/8000
--	--	8Eh:1/8000	--

3.4.2. Separate Table: Synchro Scan {OMS:[Data]}

The settings differ depending on the value of CamFormat{OSK:20:[Data]}.

Data	CamFormat{OSK:20:[Data]}				
	60P/60i	30P	24P	50P/50i	25P
001	1/60.0	1/30.0	1/24.0	1/50.0	1/25.0
002	1/60.1	1/30.0	1/24.1	1/50.1	1/25.1
003	1/60.3	1/30.1	1/24.2	1/50.3	1/25.2
004	1/60.5	1/30.2	1/24.3	1/50.4	1/25.3
005	1/60.6	1/30.3	1/24.4	1/50.6	1/25.4
006	1/60.8	1/30.4	1/24.4	1/50.7	1/25.5
007	1/61.0	1/30.5	1/24.5	1/50.9	1/25.6
008	1/61.2	1/30.6	1/24.6	1/51.1	1/25.7
009	1/61.4	1/30.8	1/24.7	1/51.2	1/25.7
00A	1/61.6	1/30.9	1/24.8	1/51.4	1/25.8
00B	1/61.8	1/31.0	1/24.9	1/51.5	1/25.9
00C	1/62.0	1/31.1	1/25.0	1/51.7	1/26.0
00D	1/62.2	1/31.2	1/25.1	1/51.9	1/26.1
00E	1/62.4	1/31.3	1/25.2	1/52.0	1/26.2
00F	1/62.6	1/31.4	1/25.3	1/52.2	1/26.3
010	1/62.8	1/31.5	1/25.4	1/52.3	1/26.4
011	1/63.0	1/31.6	1/25.5	1/52.5	1/26.5
012	1/63.2	1/31.7	1/25.6	1/52.7	1/26.6
013	1/63.4	1/31.9	1/25.7	1/52.8	1/26.7
014	1/63.6	1/32.0	1/25.8	1/53.0	1/26.8
015	1/63.9	1/32.1	1/25.9	1/53.2	1/26.9
016	1/64.1	1/32.2	1/26.0	1/53.3	1/27.0
017	1/64.3	1/32.3	1/26.1	1/53.5	1/27.1
018	1/64.5	1/32.4	1/26.2	1/53.7	1/27.2
019	1/64.7	1/32.6	1/26.3	1/53.9	1/27.3
01A	1/64.9	1/32.7	1/26.4	1/54.0	1/27.4
01B	1/65.2	1/32.8	1/26.5	1/54.2	1/27.5
01C	1/65.4	1/32.9	1/26.6	1/54.4	1/27.6
01D	1/65.6	1/33.0	1/26.7	1/54.6	1/27.7
01E	1/65.8	1/33.2	1/26.8	1/54.7	1/27.8
01F	1/66.0	1/33.3	1/26.9	1/54.9	1/28.0
020	1/66.3	1/33.4	1/27.0	1/55.1	1/28.1
021	1/66.5	1/33.5	1/27.1	1/55.3	1/28.2

CamFormat{OSK:20:[Data]}					
Data	60P/60i	30P	24P	50P/50i	25P
022	1/66.7	1/33.7	1/27.2	1/55.5	1/28.3
023	1/67.0	1/33.8	1/27.3	1/55.7	1/28.4
024	1/67.2	1/33.9	1/27.5	1/55.8	1/28.5
025	1/67.4	1/34.0	1/27.6	1/56.0	1/28.6
026	1/67.7	1/34.2	1/27.7	1/56.2	1/28.7
027	1/67.9	1/34.3	1/27.8	1/56.4	1/28.9
028	1/68.2	1/34.4	1/27.9	1/56.6	1/29.0
029	1/68.4	1/34.6	1/28.0	1/56.8	1/29.1
02A	1/68.6	1/34.7	1/28.2	1/57.0	1/29.2
02B	1/68.9	1/34.8	1/28.3	1/57.2	1/29.3
02C	1/69.1	1/35.0	1/28.4	1/57.4	1/29.5
02D	1/69.4	1/35.1	1/28.5	1/57.6	1/29.6
02E	1/69.6	1/35.3	1/28.6	1/57.8	1/29.7
02F	1/69.9	1/35.4	1/28.8	1/58.0	1/29.8
030	1/70.1	1/35.5	1/28.9	1/58.2	1/29.9
031	1/70.4	1/35.7	1/29.0	1/58.4	1/30.1
032	1/70.7	1/35.8	1/29.1	1/58.6	1/30.2
033	1/70.9	1/36.0	1/29.3	1/58.8	1/30.3
034	1/71.2	1/36.1	1/29.4	1/59.0	1/30.5
035	1/71.4	1/36.3	1/29.5	1/59.2	1/30.6
036	1/71.7	1/36.4	1/29.7	1/59.4	1/30.7
037	1/72.0	1/36.6	1/29.8	1/59.6	1/30.8
038	1/72.2	1/36.7	1/29.9	1/59.8	1/31.0
039	1/72.5	1/36.9	1/30.1	1/60.1	1/31.1
03A	1/72.8	1/37.0	1/30.2	1/60.3	1/31.3
03B	1/73.1	1/37.2	1/30.3	1/60.5	1/31.4
03C	1/73.3	1/37.3	1/30.5	1/60.7	1/31.5
03D	1/73.6	1/37.5	1/30.6	1/60.9	1/31.7
03E	1/73.9	1/37.6	1/30.7	1/61.2	1/31.8
03F	1/74.2	1/37.8	1/30.9	1/61.4	1/31.9
040	1/74.5	1/38.0	1/31.0	1/61.6	1/32.1
041	1/74.8	1/38.1	1/31.2	1/61.8	1/32.2
042	1/75.1	1/38.3	1/31.3	1/62.1	1/32.4
043	1/75.4	1/38.5	1/31.5	1/62.3	1/32.5
044	1/75.7	1/38.6	1/31.6	1/62.5	1/32.7
045	1/76.0	1/38.8	1/31.8	1/62.8	1/32.8
046	1/76.3	1/39.0	1/31.9	1/63.0	1/33.0
047	1/76.6	1/39.1	1/32.1	1/63.3	1/33.1
048	1/76.9	1/39.3	1/32.2	1/63.5	1/33.3
049	1/77.2	1/39.5	1/32.4	1/63.7	1/33.4
04A	1/77.5	1/39.7	1/32.5	1/64.0	1/33.6
04B	1/77.8	1/39.8	1/32.7	1/64.2	1/33.8
04C	1/78.1	1/40.0	1/32.9	1/64.5	1/33.9
04D	1/78.4	1/40.2	1/33.0	1/64.7	1/34.1
04E	1/78.7	1/40.4	1/33.2	1/65.0	1/34.2
04F	1/79.1	1/40.6	1/33.4	1/65.2	1/34.4
050	1/79.4	1/40.8	1/33.5	1/65.5	1/34.6
051	1/79.7	1/40.9	1/33.7	1/65.7	1/34.7
052	1/80.1	1/41.1	1/33.9	1/66.0	1/34.9
053	1/80.4	1/41.3	1/34.0	1/66.3	1/35.1
054	1/80.7	1/41.5	1/34.2	1/66.5	1/35.3
055	1/81.1	1/41.7	1/34.4	1/66.8	1/35.4
056	1/81.4	1/41.9	1/34.6	1/67.1	1/35.6
057	1/81.8	1/42.1	1/34.8	1/67.3	1/35.8
058	1/82.1	1/42.3	1/34.9	1/67.6	1/36.0
059	1/82.5	1/42.5	1/35.1	1/67.9	1/36.1
05A	1/82.8	1/42.7	1/35.3	1/68.2	1/36.3
05B	1/83.2	1/42.9	1/35.5	1/68.4	1/36.5
05C	1/83.5	1/43.1	1/35.7	1/68.7	1/36.7
05D	1/83.9	1/43.3	1/35.9	1/69.0	1/36.9
05E	1/84.3	1/43.5	1/36.1	1/69.3	1/37.1
05F	1/84.6	1/43.8	1/36.3	1/69.6	1/37.3
060	1/85.0	1/44.0	1/36.5	1/69.9	1/37.5
061	1/85.4	1/44.2	1/36.7	1/70.2	1/37.7
062	1/85.8	1/44.4	1/36.9	1/70.5	1/37.9
063	1/86.1	1/44.6	1/37.1	1/70.8	1/38.1
064	1/86.5	1/44.9	1/37.3	1/71.1	1/38.3
065	1/86.9	1/45.1	1/37.5	1/71.4	1/38.5

CamFormat{OSK:20:[Data]}					
Data	60P/60i	30P	24P	50P/50i	25P
066	1/87.3	1/45.3	1/37.7	1/71.7	1/38.7
067	1/87.7	1/45.6	1/37.9	1/72.0	1/38.9
068	1/88.1	1/45.8	1/38.1	1/72.3	1/39.1
069	1/88.5	1/46.0	1/38.3	1/72.6	1/39.3
06A	1/88.9	1/46.3	1/38.6	1/72.9	1/39.5
06B	1/89.3	1/46.5	1/38.8	1/73.2	1/39.8
06C	1/89.8	1/46.8	1/39.0	1/73.6	1/40.0
06D	1/90.2	1/47.0	1/39.3	1/73.9	1/40.2
06E	1/90.6	1/47.3	1/39.5	1/74.2	1/40.4
06F	1/91.0	1/47.5	1/39.7	1/74.6	1/40.7
070	1/91.5	1/47.8	1/40.0	1/74.9	1/40.9
071	1/91.9	1/48.0	1/40.2	1/75.2	1/41.1
072	1/92.3	1/48.3	1/40.4	1/75.6	1/41.4
073	1/92.8	1/48.5	1/40.7	1/75.9	1/41.6
074	1/93.2	1/48.8	1/40.9	1/76.3	1/41.8
075	1/93.7	1/49.1	1/41.2	1/76.6	1/42.1
076	1/94.2	1/49.3	1/41.4	1/77.0	1/42.3
077	1/94.6	1/49.6	1/41.7	1/77.3	1/42.6
078	1/95.1	1/49.9	1/42.0	1/77.7	1/42.8
079	1/95.6	1/50.2	1/42.2	1/78.0	1/43.1
07A	1/96.0	1/50.5	1/42.5	1/78.4	1/43.4
07B	1/96.5	1/50.8	1/42.8	1/78.8	1/43.6
07C	1/97.0	1/51.0	1/43.1	1/79.2	1/43.9
07D	1/97.5	1/51.3	1/43.3	1/79.5	1/44.2
07E	1/98.0	1/51.6	1/43.6	1/79.9	1/44.4
07F	1/98.5	1/51.9	1/43.9	1/80.3	1/44.7
080	1/99.0	1/52.3	1/44.2	1/80.7	1/45.0
081	1/99.5	1/52.6	1/44.5	1/81.1	1/45.3
082	1/100.0	1/52.9	1/44.8	1/81.5	1/45.6
083	1/100.5	1/53.2	1/45.1	1/81.9	1/45.9
084	1/101.1	1/53.5	1/45.4	1/82.3	1/46.2
085	1/101.6	1/53.8	1/45.7	1/82.7	1/46.5
086	1/102.2	1/54.2	1/46.0	1/83.1	1/46.8
087	1/102.7	1/54.5	1/46.3	1/83.5	1/47.1
088	1/103.2	1/54.8	1/46.7	1/83.9	1/47.4
089	1/103.8	1/55.2	1/47.0	1/84.4	1/47.7
08A	1/104.4	1/55.5	1/47.3	1/84.8	1/48.0
08B	1/104.9	1/55.9	1/47.7	1/85.2	1/48.3
08C	1/105.5	1/56.2	1/48.0	1/85.7	1/48.7
08D	1/106.1	1/56.6	1/48.4	1/86.1	1/49.0
08E	1/106.7	1/56.9	1/48.7	1/86.5	1/49.3
08F	1/107.3	1/57.3	1/49.1	1/87.0	1/49.7
090	1/107.9	1/57.7	1/49.4	1/87.5	1/50.0
091	1/108.5	1/58.1	1/49.8	1/87.9	1/50.4
092	1/109.1	1/58.4	1/50.2	1/88.4	1/50.7
093	1/109.7	1/58.8	1/50.6	1/88.8	1/51.1
094	1/110.4	1/59.2	1/50.9	1/89.3	1/51.5
095	1/111.0	1/59.6	1/51.3	1/89.8	1/51.9
096	1/111.6	1/60.0	1/51.7	1/90.3	1/52.2
097	1/112.3	1/60.4	1/52.1	1/90.8	1/52.6
098	1/112.9	1/60.8	1/52.6	1/91.3	1/53.0
099	1/113.6	1/61.3	1/53.0	1/91.8	1/53.4
09A	1/114.3	1/61.7	1/53.4	1/92.3	1/53.8
09B	1/115.0	1/62.1	1/53.8	1/92.8	1/54.2
09C	1/115.7	1/62.5	1/54.3	1/93.3	1/54.6
09D	1/116.4	1/63.0	1/54.7	1/93.8	1/55.0
09E	1/117.1	1/63.4	1/55.2	1/94.4	1/55.5
09F	1/117.8	1/63.9	1/55.6	1/94.9	1/55.9
0A0	1/118.5	1/64.4	1/56.1	1/95.5	1/56.3
0A1	1/119.2	1/64.8	1/56.6	1/96.0	1/56.8
0A2	1/120.0	1/65.3	1/57.0	1/96.6	1/57.2
0A3	1/120.7	1/65.8	1/57.5	1/97.1	1/57.7
0A4	1/121.5	1/66.3	1/58.0	1/97.7	1/58.2
0A5	1/122.3	1/66.8	1/58.6	1/98.3	1/58.7
0A6	1/123.1	1/67.3	1/59.1	1/98.9	1/59.1
0A7	1/123.8	1/67.8	1/59.6	1/99.4	1/59.6
0A8	1/124.6	1/68.3	1/60.1	1/100.0	1/60.1
0A9	1/125.5	1/68.8	1/60.7	1/100.6	1/60.6

CamFormat{OSK:20:[Data]}					
Data	60P/60i	30P	24P	50P/50i	25P
0AA	1/126.3	1/69.4	1/61.2	1/101.3	1/61.2
0AB	1/127.1	1/69.9	1/61.8	1/101.9	1/61.7
0AC	1/128.0	1/70.5	1/62.4	1/102.5	1/62.2
0AD	1/128.8	1/71.0	1/63.0	1/103.1	1/62.8
0AE	1/129.7	1/71.6	1/63.6	1/103.8	1/63.3
0AF	1/130.6	1/72.2	1/64.2	1/104.4	1/63.9
0B0	1/131.5	1/72.8	1/64.8	1/105.1	1/64.5
0B1	1/132.4	1/73.4	1/65.5	1/105.7	1/65.1
0B2	1/133.3	1/74.0	1/66.1	1/106.4	1/65.7
0B3	1/134.2	1/74.6	1/66.8	1/107.1	1/66.3
0B4	1/135.2	1/75.3	1/67.4	1/107.8	1/66.9
0B5	1/136.1	1/75.9	1/68.1	1/108.5	1/67.5
0B6	1/137.1	1/76.6	1/68.8	1/109.2	1/68.2
0B7	1/138.1	1/77.2	1/69.5	1/109.9	1/68.8
0B8	1/139.1	1/77.9	1/70.3	1/110.7	1/69.5
0B9	1/140.1	1/78.6	1/71.0	1/111.4	1/70.2
0BA	1/141.1	1/79.3	1/71.8	1/112.1	1/70.9
0BB	1/142.1	1/80.0	1/72.6	1/112.9	1/71.6
0BC	1/143.2	1/80.7	1/73.4	1/113.7	1/72.3
0BD	1/144.3	1/81.5	1/74.2	1/114.5	1/73.0
0BE	1/145.4	1/82.2	1/75.0	1/115.2	1/73.8
0BF	1/146.5	1/83.0	1/75.9	1/116.0	1/74.6
0C0	1/147.6	1/83.8	1/76.8	1/116.9	1/75.3
0C1	1/148.7	1/84.6	1/77.7	1/117.7	1/76.1
0C2	1/149.9	1/85.4	1/78.6	1/118.5	1/77.0
0C3	1/151.1	1/86.2	1/79.5	1/119.4	1/77.8
0C4	1/152.3	1/87.1	1/80.5	1/120.2	1/78.7
0C5	1/153.5	1/87.9	1/81.5	1/121.1	1/79.5
0C6	1/154.7	1/88.8	1/82.5	1/122.0	1/80.4
0C7	1/156.0	1/89.7	1/83.5	1/122.9	1/81.3
0C8	1/157.2	1/90.6	1/84.6	1/123.8	1/82.3
0C9	1/158.5	1/91.5	1/85.6	1/124.7	1/83.2
0CA	1/159.9	1/92.5	1/86.8	1/125.7	1/84.2
0CB	1/161.2	1/93.5	1/87.9	1/126.6	1/85.2
0CC	1/162.6	1/94.5	1/89.1	1/127.6	1/86.2
0CD	1/163.9	1/95.5	1/90.3	1/128.6	1/87.3
0CE	1/165.3	1/96.5	1/91.5	1/129.6	1/88.4
0CF	1/166.8	1/97.6	1/92.8	1/130.6	1/89.5
0D0	1/168.2	1/98.7	1/94.1	1/131.6	1/90.6
0D1	1/169.7	1/99.8	1/95.5	1/132.7	1/91.8
0D2	1/171.2	1/100.9	1/96.8	1/133.7	1/93.0
0D3	1/172.8	1/102.1	1/98.3	1/134.8	1/94.2
0D4	1/174.3	1/103.2	1/99.7	1/135.9	1/95.5
0D5	1/175.9	1/104.5	1/101.3	1/137.0	1/96.8
0D6	1/177.6	1/105.7	1/102.8	1/138.2	1/98.1
0D7	1/179.2	1/107.0	1/104.4	1/139.3	1/99.4
0D8	1/180.9	1/108.3	1/106.1	1/140.5	1/100.8
0D9	1/182.6	1/109.6	1/107.8	1/141.7	1/102.3
0DA	1/184.4	1/111.0	1/109.6	1/142.9	1/103.8
0DB	1/186.1	1/112.4	1/111.4	1/144.1	1/105.3
0DC	1/188.0	1/113.8	1/113.3	1/145.4	1/106.9
0DD	1/189.8	1/115.3	1/115.3	1/146.7	1/108.5
0DE	1/191.7	1/116.8	1/117.3	1/148.0	1/110.2
0DF	1/193.6	1/118.4	1/119.4	1/149.3	1/111.9
0E0	1/195.6	1/120.0	1/121.6	1/150.6	1/113.7
0E1	1/197.6	1/121.6	1/123.8	1/152.0	1/115.5
0E2	1/199.7	1/123.3	1/126.2	1/153.4	1/117.4
0E3	1/201.8	1/125.1	1/128.6	1/154.8	1/119.4
0E4	1/203.9	1/126.8	1/131.2	1/156.3	1/121.4
0E5	1/206.1	1/128.7	1/133.8	1/157.8	1/123.5
0E6	1/208.3	1/130.6	1/136.5	1/159.3	1/125.7
0E7	1/210.6	1/132.5	1/139.4	1/160.8	1/127.9
0E8	1/212.9	1/134.5	1/142.4	1/162.4	1/130.2
0E9	1/215.3	1/136.6	1/145.5	1/164.0	1/132.7
0EA	1/217.7	1/138.7	1/148.7	1/165.6	1/135.2
0EB	1/220.2	1/140.9	1/152.1	1/167.3	1/137.8
0EC	1/222.8	1/143.2	1/155.7	1/169.0	1/140.5
0ED	1/225.4	1/145.5	1/159.4	1/170.7	1/143.3

CamFormat{OSK:20:[Data]}					
Data	60P/60i	30P	24P	50P/50i	25P
0EE	1/228.1	1/148.0	1/163.3	1/172.5	1/146.2
0EF	1/230.8	1/150.5	1/167.4	1/174.3	1/149.3
0F0	1/233.6	1/153.1	1/171.8	1/176.1	1/152.5
0F1	1/236.5	1/155.8	1/176.3	1/178.0	1/155.8
0F2	1/239.4	1/158.5	1/181.1	1/179.9	1/159.3
0F3	1/242.4	1/161.4	1/186.2	1/181.9	1/162.9
0F4	1/245.5	1/164.4	1/191.5	1/183.9	1/166.7
0F5	1/248.7	1/167.5	1/197.2	1/185.9	1/170.7
0F6	1/252.0	1/170.7	1/203.2	1/188.0	1/174.9
0F7	1/255.3	1/174.1	1/209.6	1/190.2	1/179.3
0F8	1/258.7	1/177.6	1/216.4	1/192.3	1/183.9
0F9	1/262.3	1/181.2	1/223.7	1/194.6	1/188.7
0FA	1/265.9	1/185.0	1/231.5	1/196.9	1/193.8
0FB	1/269.6	1/188.9	1/239.8	1/199.2	1/199.2
0FC	1/273.5	1/193.0	1/248.7	1/201.7	1/205.0
0FD	1/277.4	1/197.3	1/258.4	1/204.1	1/211.0
0FE	1/281.5	1/201.8	1/268.8	1/206.7	1/217.4
0FF	1/285.6	1/206.5	1/280.1	1/209.2	1/224.3

3.4.3. Separate Table: Auto Slow Shutter Limit {OSK:07:[Data]}

The settings differ depending on the value of CamFormat{OSK:20:[Data]}.

CamFormat{OSK:20:[Data]}			
60P/60i	30P	24P	50P/50i/25P
0h:1/60	0h:1/60	0h:1/48	0h:1/50
1h:1/30	1h:1/30	3h:1/24	2h:1/25
4h:1/15	4h:1/15	5h:1/12	5h:1/12
6h:1/8	6h:1/8	7h:1/6	7h:1/6

3.4.4. Separate Table: Auto Shutter Limit {OSD:BF:[Data]}

The settings differ depending on the value of CamFormat{OSK:20:[Data]}.

CamFormat{OSK:20:[Data]}	
60P/60i/30P/24P	50P/50i/25P
0h:Off	0h:Off
2h:1/100	2h:1/100
3h:1/120	3h:1/125
4h:1/250	4h:1/250

3.4.5. Separate Table: VAR{OSD:B1:[Data]}

[Data]	VAR value
000h	2000
001h	2010
002h	2020
003h	2040
004h	2050
005h	2070
006h	2080
007h	2090
008h	2110
009h	2120
00Ah	2140

[Data]	VAR value
01Fh	2500
020h	2520
021h	2540
022h	2560
023h	2600
024h	2620
025h	2640
026h	2680
027h	2700
028h	2720
029h	2740

[Data]	VAR value
03Eh	3450
03Fh	3510
040h	3570
041h	3600
042h	3660
043h	3720
044h	3780
045h	3840
046h	3870
047h	3930
048h	3990

[Data]	VAR value
05Dh	5750
05Eh	5850
05Fh	6000
060h	6150
061h	6300
062h	6450
063h	6650
064h	6800
065h	7000
066h	7200
067h	7400

[Data]	VAR value
00Bh	2150
00Ch	2170
00Dh	2180
00Eh	2200
00Fh	2210
010h	2230
011h	2250
012h	2260
013h	2280
014h	2300
015h	2310
016h	2330
017h	2350
018h	2360
019h	2380
01Ah	2400
01Bh	2420
01Ch	2440
01Dh	2460
01Eh	2480

[Data]	VAR value
02Ah	2780
02Bh	2800
02Ch	2825
02Dh	2850
02Eh	2875
02Fh	2900
030h	2950
031h	2975
032h	3000
033h	3025
034h	3075
035h	3100
036h	3125
037h	3175
038h	3200
039h	3250
03Ah	3275
03Bh	3330
03Ch	3360
03Dh	3420

[Data]	VAR value
049h	4050
04Ah	4110
04Bh	4170
04Ch	4240
04Dh	4320
04Eh	4360
04Fh	4440
050h	4520
051h	4600
052h	4680
053h	4760
054h	4840
055h	4920
056h	5000
057h	5100
058h	5200
059h	5300
05Ah	5400
05Bh	5500
05Ch	5600

[Data]	VAR value
068h	7600
069h	7850
06Ah	8100
06Bh	8400
06Ch	8600
06Dh	8900
06Eh	9200
06Fh	9600
070h	10000
071h	10500
072h	11000
073h	11500
074h	12000
075h	12500
076h	13000
077h	14000
078h	15000

3.5. Direct Control

The zoom, focus, iris, and white balance can be controlled externally when using the AG-UCK20 or MDC20.

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
Zoom Speed	#Z[Data]	zS[Data]	-	-	01(Wide Max.) ~ 49(Wide Min.) 50(Stop) 51(Tele Min.) ~ 99(Tele Max)	Not supported
Zoom(TELE)	HZT	HZT	-	-	Move to tele	Not supported
Zoom(WIDE)	HZW	HZW	-	-	Move to wide	Not supported
Zoom(STOP)	HZS	HZS	-	-	Stop ZOOM	Not supported
Zoom Speed	LZS:[Data]	LZS:[Data]	-	-	0(Slow) ~ 9(Fast)	Not supported
Zoom Position Control	#AXZ[Data]	axz[Data]	#AXZ	axz[Data]	555h(Wide) ~ FFFh(Tele)	Not supported
[PUSH AUTO]	OSE:69:[Data]	OSE:69:[Data]	-	-	1h(Execute)	Not supported
Focus Speed	#F[Data]	fS[Data]	-	-	01(Near Max.) ~ 49(Near Min.) 50(Stop) 51(Far Min.) ~ 99(Far Max.)	Not supported
Focus(FAR)	HFF	HFF	-	-	Move to far	Not supported
Focus(NEAR)	HFN	HFN	-	-	Move to near	Not supported
Focus(STOP)	HFS	HFS	-	-	Stop FOCUS	Not supported
Focus Speed	LFS:[Data]	LFS:[Data]	-	-	0(Slow) ~ 9(Fast)	Not supported
Focus Position Control	#AXF[Data]	axf[Data]	#AXF	axf[Data]	555h(Near) ~ FFFh(Far)	Not supported
Iris Control	#AXI[Data]	axi[Data]	#AXI	axi[Data]	555h(Iris Close) ~ FFFh(Iris Open)	Not supported
IRIS(OPEN)	LIO	LIO	-	-	Move to open	Not supported
IRIS(CLOSE)	LIC	LIC	-	-	Move to close	Not supported
IRIS(STOP)	LIT	LIT	-	-	Stop IRIS	Not supported
IRIS(SPEED)	LIS:[Data]	LIS:[Data]	-	-	0(Slow) ~ 9(Fast)	Not supported
WB SET	OWS	OWS	-	-	Execute	Not supported
BB SET	OAS	OAS	-	-	Execute	Not supported

3.6. Other Camera Information

Other camera information can be controlled externally when using the AG-UCK20 or MDC20.

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
CamFormat	-	-	QSK:20	OSK:20:[Data]	01h(59.94p,59.94i) 02h(29.97p) 03h(23.98p) 04h(50p,50i) 05h(25p)	Not supported
[FREEZE FRAME]	OSK:23:[Data]	OSK:23:[Data]	QSK:23	OSK:23:[Data]	0h(NORMAL) 1h(FREEZE FRAME)	Not supported
Lens Position Information Control	#LPC[Data]	IPC[Data]	#LPC	IPC[Data]	0(OFF) 1(ON)	Not supported
PowerON, Standby	#O[Data]	p[Data]	#O	p[Data]	0h(Stand-by) 1h(Power ON) 4h(Power OFF) 5h(Reboot)	←
<Model number>	-	-	QID	OID:[Data]	"AG-UCK20" or "AG-MDC20"	"AG-UMR20" or "AG-MDR25"
SOFTWARE VERSION	-	-	QSV	OSV:[Data]	"Ver.*****"	←

3.6.1. Supplement: CamFormat{QSK:20}

This information is required in the control of the shutter speed and auto slow shutter limit in "3.4 Switch Setting Control."

It is for reference.

3.7. Recording Settings

Some items in the [RECORD SETUP] menu for recording settings can be controlled externally.

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[SYSTEM FREQ]	OSE:77:[Data]	OSE:77:[Data]	QSE:77	OSE:77:[Data]	0h(59.94Hz) 1h(50.00Hz)	←

3.8. Output Settings

Some items in the [OUTPUT SETUP] menu for output settings can be controlled externally.

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[SDI MODE SEL]	OSK:24:[Data]	OSK:24:[Data]	QSK:24	OSK:24:[Data]	0h(NORMAL) 1h(THROUGH)	←
[OUTPUT SEL]	OSK:18:[Data]	OSK:18:[Data]	QSK:18	OSK:18:[Data]	1h(HDMI) 2h(SDI) 3h(HDMI+SDI)	←
[CHAR OUTPUT]	OSE:7B:[Data]	OSE:7B:[Data]	QSE:7B	OSE:7B:[Data]	00h(CHAR OFF) 03h(CHAR ON)	←
[TEST TONE]	OSK:19:[Data]	OSK:19:[Data]	QSK:19	OSK:19:[Data]	0h(OFF) 1h(Level1) 2h(Level2)	←

3.9. Display Settings

Some items in the [DISP SETUP] menu for display settings can be controlled externally.

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[COLOR BARS]	DCB:[Data]	DCB:[Data]	QBR	OBR:[Data]	0(OFF) 1(ON)	←
[BARS TYPE]	OSD:BA:[Data]	OSD:BA:[Data]	QSD:BA	OSD:BA:[Data]	0h(TYPE2) 1h(TYPE1)	←

3.10. Other Settings

Some items in the [OTHER FUNCTION] menu for other settings can be controlled externally.

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[DISPLAY MENU]	OSK:17:[Data]	OSK:17:[Data]	QSK:17	OSK:17:[Data]	0 (Touch) 1 (Text)	Not supported
[OSD STATUS]	OSA:88:[Data]	OSA:88:[Data]	QSA:88	OSA:88:[Data]	0(OFF) 1(ON)	Not supported
<Initial settings (scene) + (user)>	INM	INM	-	-	Execute	←

3.11. Menu Control

Menus can be opened and operated from an external device. This enables functions not available in the commands to also be controlled from an external device.

Command name <POVCAM MENU>	Control command	Control response	Query command	Query response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
MENU On/Off	DUS:[Data]	DUS:[Data]	QUS	OUS:[Data]	0h(OFF), 1h (ON as in menu settings) 2h (Force text) 3h (Force touch)	0h(OFF), 1h (ON as in menu settings) 3h (Force touch)
MENU Cancel	DPG:[Data]	DPG:[Data]	-	-	1h(Execute)	←
SET Botton	DIT:[data]	DIT:[data]	-	-	1h(Execute)	←
UP	DUP:[Data]	DUP:[Data]	-	-	1h(1Step) Ah(10Step)	←
DOWN	DDW:[Data]	DDW:[Data]	-	-	1h(1Step) Ah(10Step)	←

4. Camera information 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 command that takes 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.

4.1. Procedure for receiving the update notifications

An HTTP message is sent to the camera to start or stop the reception of the update notification from the camera.

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.

The “update notification receive start steps” and “update notification receive end steps” are each described below.

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 (fixed to 31004)

Given below is the sequence which is followed when receiving the update notifications is started.

[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 received the command.

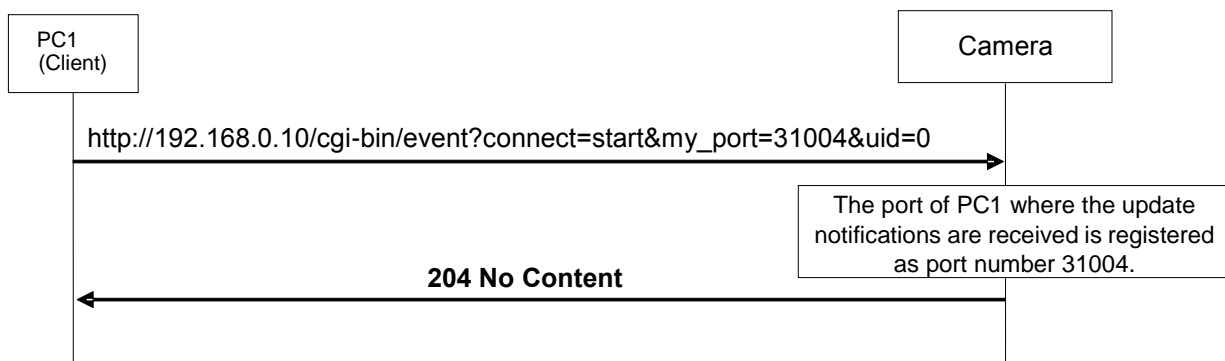


Figure 4-1 Update notification receive start sequence

[Caution]

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

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 (fixed to 31004)

Given below is the sequence which is followed when receiving the update notifications is to be ended.

[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.

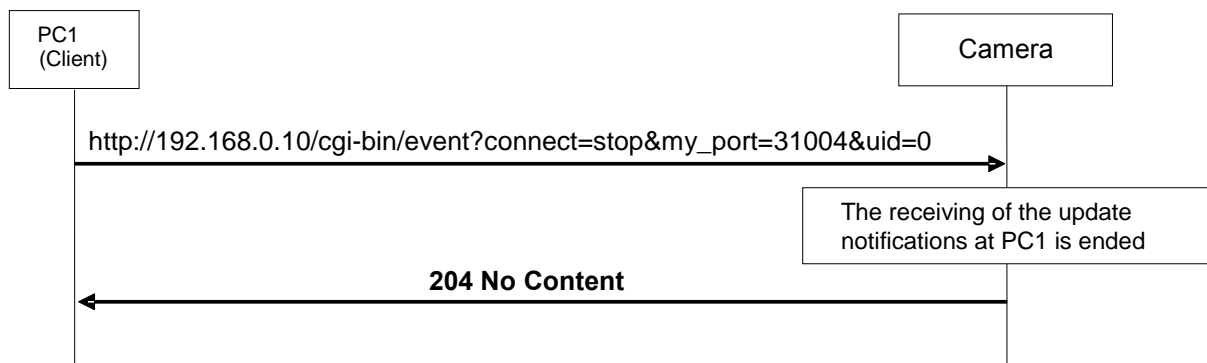


Figure 4-2 Update notification receive end sequence

4.2. Data format for update notifications

The data received in the update notifications will be described next.

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

Figure 4-3 Receive data format

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

The updates of the camera are described in the update notification information. The format used for the update notification information received from the camera is given below.

[Update notification information format]

[CR][LF][**Command response format**][CR][LF]

* [CR]: 0x0d, [LF]: 0x0a

Example 1) Power: On

[CR][LF]**p1**[CR][LF]

Example 2) Color bar: On

[CR][LF]**DCB:1**[CR][LF]

4.3. Setting change sequence

Update notifications are sent when the settings or statuses of the camera have been changed. Given below is an example of the update notification sequence. 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.

4.3.1. Changing the settings from a terminal

[Changing the settings from the local terminal]

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.

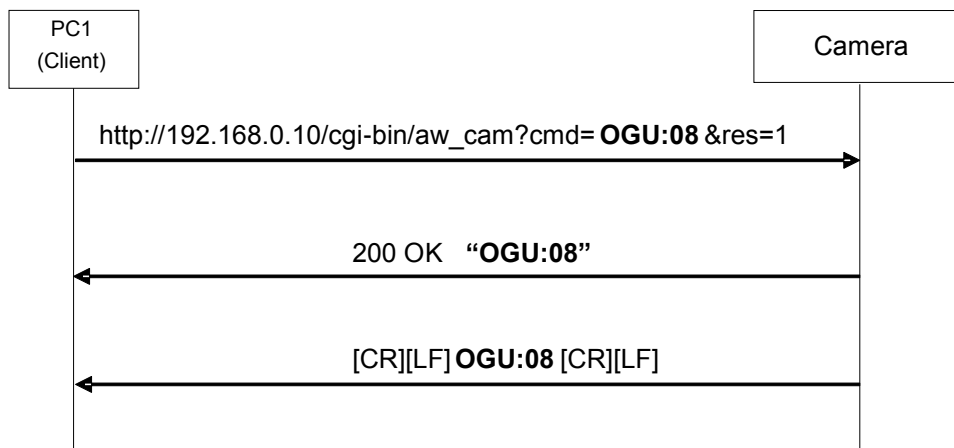


Figure 4-4 Changing the settings from the local terminal

[Changing the settings from another terminal]

When a camera setting has been changed from another terminal (PC2), the local terminal (PC1) is also notified of the change.

In addition to the HTTP response to the command, the other terminal (PC2) is notified of the change by an update notification as well.

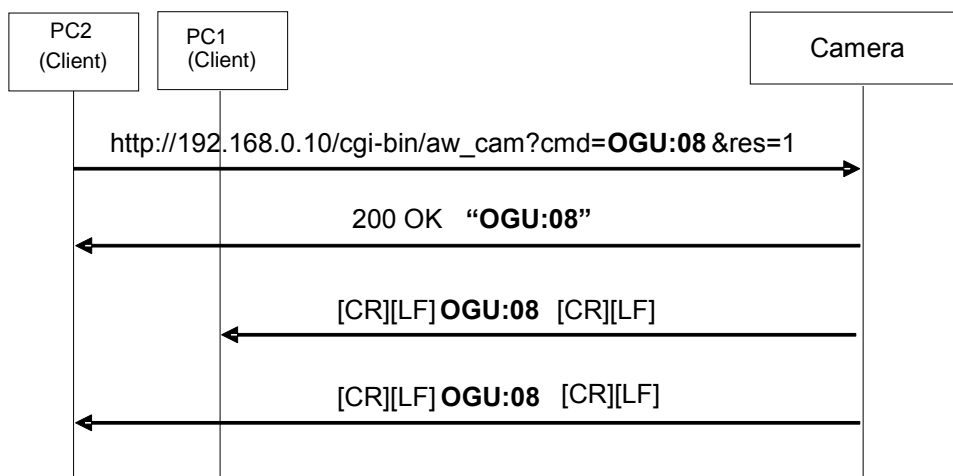


Figure 4-5 Changing the settings from another terminal

4.3.2. 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.

4.3.2.1. Version information notification

The version information is posted in 60-second cycles.

The information posted is given below.

Table 4-6

Notification	Version information
qSV3V*****L000	qSV3V**.**.L000

Given below is the sequence which is followed when the version information is received.

[Sequence when the version information is received]

The camera sends the version information in 60-second cycles, and this information is received by terminals PC1 and PC2.

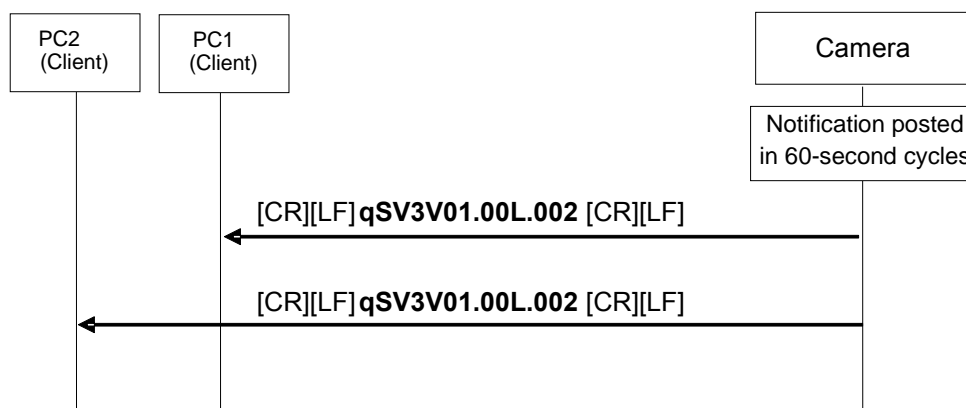


Figure 4-6 Sequence when the version information is received

4.3.2.2. LPI information (lens information)

Notification is sent in a 300 ms cycle when Lens Position Information Control has been set to ON and a change has been made in the LPI information (lens information). The information notified is given below.

Table 4-7

Notification	Lens information
IPI [ZZZ] [FFF] [III]	ZZZZoom position FFFFocus position IIIIris position

Given below is the sequence which is followed when changes in the LPI (lens) information are received.

[Sequence when LPI information (lens information) is changed]

When the camera detects changes in the LPI (lens) information, the changed LPI (lens) information is sent to the terminals, and terminals PC1 and PC2 receive this information.

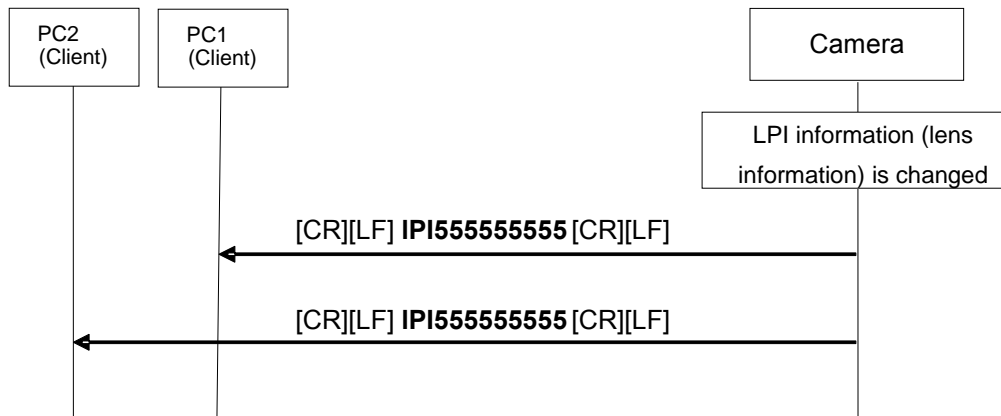


Figure 4-8 Sequence when LPI information is changed

5. 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

* **IP Address** IP address of camera at connection destination

[Receive]

200 OK "**Camera information**"

* **Camera information** The information is given in the table below, and the separator of each information is a [CR][LF].

Camera information	Response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
PowerOn/Standby status (PowerOn/Standby)	p[data]	0 : Standby 1 : PowerOn	←
Model name (Model name)	OID:[data]	[AG-UCK20+AG-UMR20] AG-UCK20 [AG-MDC25+AG-MDR20] AG-MDC25	[AG-UMR20] AG-UMR20 [AG-MDR20] AG-MDR20
CGI send interval (Interval time for sending CGI)	CGI_TIME:[data]	0 (Fixed)	←
Output format (Format)	OSA:87:[data]	[59.94Hz] 04h 1080/59.94i 01h 720/59.94p 12h 480/59.94p [50Hz] 05h 1080/50i 02h 720/50p 13h 576/50p	[59.94Hz] 04h 1080/59.94i 10h 1080/59.94p 07h 1080/29.97psF 14h 1080/29.97p 0Ah 1080/23.98psF 16h 1080/23.98p 01h 720/59.94p 12h 480/59.94p [50Hz] 05h 1080/50i 11h 1080/50p 08h 1080/25psF 15h 1080/25p 02h 720/50p 13h 576/50p
Camera name (Camera title)	TITLE:[data]	Max. 20 half-size characters	←
<Series signal>	OSK:22:[data]	AG-POVCAM2	←
[SYSTEM FREQ]	OSE:77:[Data]	See separate page	←
CamFormat	OSK:20:[Data]	See separate page	No response
[SELECT SCENE]	OSF:[data]	See separate page	No response
[DETAIL LEVEL]	OSA:30:[data]	See separate page	No response
[V DETAIL LEVEL]	OSD:16:[Data]	See separate page	No response
[DETAIL CORING]	OSK:01:[Data]	See separate page	No response

Camera information	Response	Data value AG-UCK20/MDC20	Data value AG-UMR20/MDR25
[SKIN TONE DTL]	OSE:32:[Data]	See separate page	No response
[WB R GAIN]	ORG:[data]	See separate page	No response
[WB B GAIN]	OBG:[data]	See separate page	No response
[MASTER PED]	OTD:[data]	See separate page	No response
[KNEE]	OSA:2D:[Data]	See separate page	No response
[WHITE BALANCE MODE]	OAW:[data]	See separate page	No response
[VAR]	OSD:B1:[Data]	See separate page	No response
[SHUTTER MODE]	OSK:08:[data]	See separate page	No response
[SHUTTER SPEED]			
[IRIS MODE]	ORS:[Data]	See separate page	No response
Auto/Manual setting of Iris (Iris Mode)	d3[data]	0 : Manual 1 : Auto	No response
[GAIN MODE]	OGU:[data]	See separate page	No response
[ND FILTER]	OFT:[Data]	See separate page	No response
[O.I.S.]	OIS:[Data]	See separate page	No response
iZoom	OSD:B3:[Data]	See separate page	No response
Digital Zoom	ODE:[Data]	See separate page	No response
[INFRARED REC]	d6[data]	See separate page	No response
[SCAN REVERSE]	iNS[data]	See separate page	No response
Zoom position (Zoom position)	axz[data]	See separate page	No response
Auto/Manual setting of focus (Focus mode)	d1[data]	See separate page	No response
Focus position (Focus position)	axf[data]	See separate page	No response
Iris position (Iris follow)	OSD:4F:[data]	00 : Close ... FF : Open	No response
[COLOR BARS]	OBR:[data]	See separate page	←
[CHAR OUTPUT]	OSE:7B:[Data]	See separate page	←
MENU On/Off	OUS:[data]	See separate page	←
Whether error notification (Error notice)	OER:[data]	0 : Normal 1 : Error	←

6. Error return

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

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

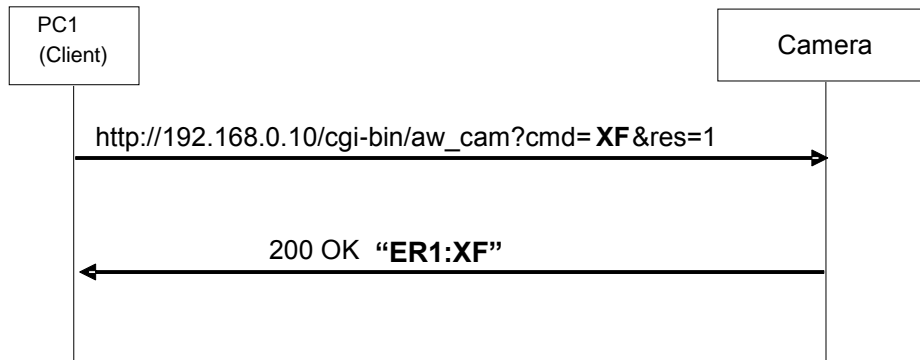


Figure 6 -1 Error (ER1)

ER2 (busy status)

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

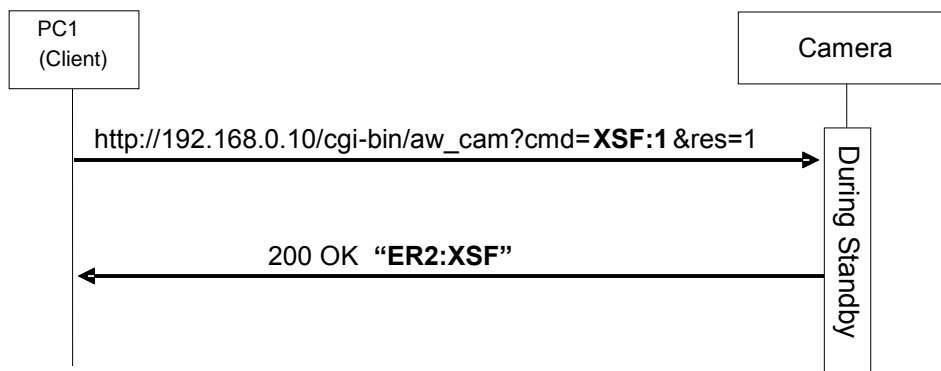


Figure 6 -2 Error (ER2)

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.

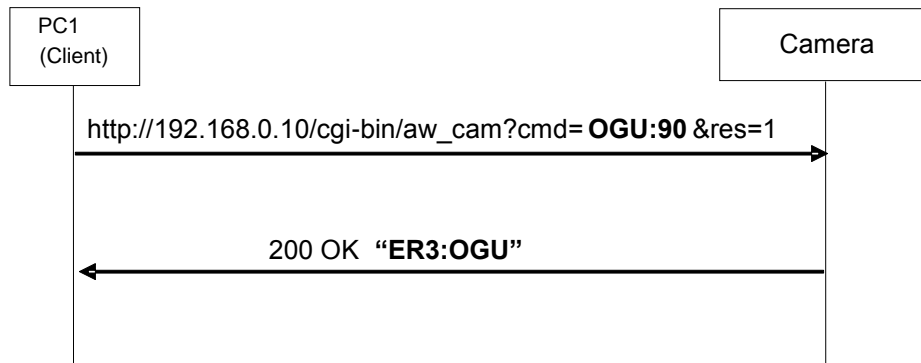


Figure 6 -3 Error (ER3)