FUJIFILM

Pelco-D Protocol Specification

for SX800

March 25, 2026

Version 3.20.0

FUJIFILM

Change history

Ver.	Date	Revision
2.5	2019/07/19	First version
2.51	2010/01/31	Add SX801as the applicable model, Add 5.7.15 Download Firmware
2.80	2020/12/11	SX800, 801 FW Ver.1.40 supported - 5.5.1 Set VLC Filter:　Add 4th Filter (for the specific user) to the VLC FL argument. - 5.2.11 Query Zoom Position:　Add a command that returns the zoom position (0x5D: Query Zoom Position Response). - 5.6.11 Set Antialiasing:　Adds a command to control ON/OFF of antialiasing on the OSD. - 5.6.15 Query Display Setting:　Add to get the antialiasing ON/OFF status of the OSD (0x53 Query Display Setting Response) - 5.6.15 Query Display Setting:　Add to get the display ON/OFF status for zoom bar and AF frame (0x55 Query Display Setting Response) - Appendix 1,2: Tables for Zoom control data vs. focal length and Focus control data vs. subject distance are attached
1.6	2022/03/04	Unified specification version with corresponding firmware version. - 5.4.6 Set Auto Day/Night Control Mode: Added command comments. - 5.4.7 Set Manual Day/Night: Added command comments. - 5.5.1 Set VLC Filter: Added command comments. - 5.12 Added Original Command 9 (In-House Custom Parameter No. 9, “DayNight Setting Ex”).
2.00	2022/03/11	- 5.2.1 Set Zoom Speed: Added description of new command and parameters for backward compatibility. - 5.2.2 Set Focus Speed: Added description of new command and parameters for backward compatibility. - 5.3.11 Set Manual Shutter Speed: Added descriptions of shutter speed items. - 5.3.12 Query Manual Shutter Speed: Added descriptions of shutter speed items. - 5.5.11 Set Select White Balance: Added arguments. - 5.11 Added Original Command 8 (In-House Custom Parameter No. 8, “Image Quality Parameter Fine”). - 5.13 Added Original Command 10 (In-House Custom Parameter No. 10, “Zoom Focus Setting Ex”).
2.00.4	2022/04/27	Clerical error correction
2.12.0	2022/11/10	Arguments addition (0x02 : Crop) for Set Digital Zoom (F0 37). Change response value (0~1 → 0~2) when Query ImageQuality Setting F0 3D/3F) is set to 0x37.
3.20.0	2026/03/25	- Removed the SX801 from the list of supported models - 5.1 Standard Command: Added command comments. - 5.3.13 Set Manual ISO 5.3.14 Query Manual ISO 5.3.15 Query Manual Iris: Corrected typos in the arguments. - 5.10.1 Query LogData: Added a description of the receive command and corrected typos. - 5.13.1 Set Zoom Speed Ex 5.13.2 Set Focus Speed Ex: Added descriptions of the arguments.

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Appendix 2. Table of FOCUS Position vs Subject distance

1 Summary

This document specifies the Pelco-D protocol in FUJIFILM SX800.

2 Overview

Pelco-D is a protocol proposed by Pelco, mainly for controlling a PTZ camera. It is a commonly published protocol and is adopted from SX800 because it is being standardized worldwide.

3 Overview about Pelco-D

The Pelco-D protocol is a master-slave type protocol, and up to 255 slaves can be connected to one master. The slave side does not transmit data without receiving a request from the master. The address that can be set as this specification is 31 patterns of 1 to 31 at maximum (※ RS485_ID is 1 to 31). Communication shall be set according to the following contents.

■ Serial data format

Baudrate: 2400, 4800, 9600, 19200, 38400, 115200

StartBit: 1

DataLength: 8

StopBit: 1

Parity: None

3.1 Send command format

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	—	—	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. CMND1 is an extension command (* When adding a command, register this)
4. CMND2 is a command for basic operation
5. Set DATA1 and DATA2 according to the contents of CMND1 and CMND2
6. Set the sum of 2nd to 6th Bytes in 8 bits to CKSM

3.2 Receive command format

The receive command format differs depending on the command. The commands defined by Pelco are as follows,

3.2.1 Receive command (General Response)

Reply as 4 Bytes data.

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

3.2.2 Receive command (Extended Response)

Reply as 7 Bytes data.

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	—	—	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set specific data for each commands to DATA1 and DATA2
5. Set the sum of ADDR to DATA2 in 8 bits is set to CKSM

3.2.3 Receive command (Query Response)

Reply as 18 Bytes data

Byte	1	2	3	····	17	18
	SYNC	ADDR	DATA1	····	DATA15	CKSM
	0xFF	—	—	····	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set specific data for each commands to DATA1 to DATA15
4. Set the sum of ADDR to DATA15 in 8 bits to CKSM

   * As for Query Serial Number command in this specification, set the sum of ADDR to DATA 15 in 8 bits to CKSM

3.2.4 Receive command(Extended Response2)

Reply as 7 Bytes data

* The difference from Extended Response (3.2.2) is that new CMD1 and CMD2 are used instead of CMD1 and CMD2 received in RESP1 and RESP2.

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	—	—	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set RESP1、RESP2
4. Set specific data for each commands to DATA1 and DATA2
5. Set the sum of 2nd to 6th Bytes in 8 bits to CKSM

4 Functional specifications

The address used for communication and the baud rate are switched from software by setting.

Address => 1 to 31 (When shipped from factory or after reset, RS485_ID=7 (= device setting ID))

Baud rate => 0 to 5 [Value: 0: 2400, 1: 4800, 2: 9600, 3: 19200, 4: 38400, 5: 115200] (When shipped from the factory or after reset, Baud rate is "2: 9600")

Pelco has specified that all commands of Standard Command described in the next chapter are automatically stopped after driving for up to 15 seconds for runaway detection, and this specification also follows this. As for timeout, if the drive command is received again before the timeout occurs, the timer is reset.

Notes on communicating with the SX800, SX801

- SX800 and SX801 do not have the ability to queue commands, so if you issue the next send command before receiving the receive command for the previous send command, the previous command will be discarded

5 Command details

The commands are classified into commands defined by Pelco and commands uniquely defined in this specification.

The commands defined by Pelco are further classified into "**Standard Command**", "**Extended Command**", and "**Original Command**".

5.1 Standard Command

Basic commands defined by Pelco-D.

5.1.1 Send command

Byte 3, CMND:1							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Sense	0	0	Auto/Manual Scan	Camera On/Off	Iris Close	Iris Open	Focus Near
Byte 4, CMND:2							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Focus Far	Zoom Wide	Zoom Tele	Down	Up	Left	Right	Always 0

1. Since Bit3-Bit7 of CMND1 is not used in the latest Pelco-D, this specification does not support either.
2. Bit0-Bit2 of CMND1 and Bit5-Bit7 of CMND2 can only be set one bit at a time. Setting multiple bits would not be supported.
   For example, setting bits for zoom operations and focus operations at the same time will be invalid.
3. Set all bits Bit0-2 of CMND1 and also Bit5-6 of CMND2 to 0 to stop Iris/Focus/Zoom operations.
4. Commands with inconsistent combinations (Iris Close/Open, Focus Near/Far, Zoom Wide/Tele, Down/UP, and Left/Right) will be invalid.

5.1.2 Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2 Extended Command

Extended command specified by Pelco-D.

5.2.1 Set Zoom Speed

Command to change zoom speed (from version 2.00, use 5.13.1, “Set Zoom Speed Ex”)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x25	0x00	ZOOM_SPEED	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set the speed (ZOOM_SPEED) according to the purpose in DATA 2
6. Set the sum of 2nd to 6th Bytes in 8 bits to CKSM

■ Argument of ZOOM_SPEED

DATA2	Description	New commands executed by this command (5.13.1, “Set Zoom Speed Ex”)
0x00	Slowest Speed (=Low Medium Speed)	The new command 0x07 is executed internally.
0x01	Low Medium Speed	The new command 0x05 is executed internally.
0x02	High Medium Speed	The new command 0x03 is executed internally.
0x03	Highest Speed (=High Medium Speed)	The new command 0x01 is executed internally.
Others	Low Medium Speed	The new command 0x05 is executed internally.

Note: With firmware version 1.60 and earlier, 0x00 and 0x02 select the same zoom speeds as 0x01 and 0x03, respectively

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.2 Set Focus Speed

Command to change focus speed (from version 2.00, use 5.13.2, “Set Focus Speed Ex”)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x27	0x00	FOCUS_SPEED	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set the speed (FOCUS_SPEED) according to the purpose in DATA 2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

Argument of FOCUS_SPEED

DATA2	Description	New commands executed by this command (5.13.2, “Set Focus Speed Ex”)
0x00	Slowest Speed (=High Medium Speed)	The new command 0x07 is executed internally.
0x01	Low Medium Speed (=High Medium Speed)	The new command 0x05 is executed internally.
0x02	High Medium Speed	The new command 0x03 is executed internally.
0x03	Highest Speed (=High Medium Speed)	The new command 0x01 is executed internally.
Others	High Medium Speed	The new command 0x03 is executed internally.

Note: With firmware version 1.60 and earlier, all arguments select the same focus speed.

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.3 Auto focus on/off

Command to switch auto focus on / off / quick AF

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x2B	0x00	AUTO F_CTL	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set AUTO F_CTL to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ AUTO F_CTL

DATA2	Description
0x00	AF on
0x01	AF off (MF)
0x02	Quick AF
Others	AF on

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.4 Auto Iris on/off

Command to switch auto iris on / off

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x2D	0x00	AUTO I_CTL	—

1. Always set 0xFF to SYNC
2. Set 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set AUTO I_CTL to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of AUTO I_CTL

DATA2	Description
0x00	Off (Manual iris)
0x01	On (Auto iris)
Others	On (Auto iris)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.5 AGC auto/on/off

Command to switch AGC standard/off/Hyper

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	－	0x00	0x2F	0x00	AGC_CTL	－

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set AGC_CTL to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of AGC_CTL

DATA2	Setting
0x00	Standard
0x01	Off
0x02	Hyper
Others	Standard

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.6 Backlight compensation on/off

Command to switch backlight compensation on / off

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x31	0x00	BLC_CTL	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set BLC_CT to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of BLC_CTL

DATA2	Description
0x00	OFF
0x01	1: Soft
0x02	2: Hard
Others	OFF

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.7 <Reserved>

5.2.8 Set Zoom Position

Command to set zoom position

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x4F	ZOOM_P MSB	ZOOM_P LSB	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set the zoom position (MSB) according to the purpose to DATA1
5. Set the zoom position (LSB) according to the purpose to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of ZOOM_P

DATA1,DATA2	Description
0～65535	Zoom Position

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.9 Set Remote Baud Rate

Command to set Remote baud rate

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x67	0x00	SET B_RARE	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the baud rate according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set the baud rate accordance with the oppose to DATA2
6. Set the sum of ADDT to DATA2 in 8 bits to CKSM

■ Argument of SET B_RARE

DATA	Baud rate
0x00	2400
0x01	4800
0x02	9600(Default)
0x03	19200
0x04	38400
0x05	115200
Others	9600

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0xoo to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.10 Time Set Opcode

Command to set the clock and get the report of clock setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	SUB OP CODE	0x77	Various	Various	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set SUB OP CODE to CMND1
4. Set the command accordance with the purpose to CMND2
5. Set the value which are selected by SUB OP CODE to DATA1 and DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of SUB OP CODE

Set binary numbers to Second, Minute, Hour, Month, Day, and Year.
In addition, for example, when 24 or more numbers is put into Hour, it is ignored.

CMND1	DATA1	DATA2	Description
0x00	Second		Set second (0x00-0x3B) and synchronize time
0x01	0x00	0x00	Report second
0x02	Hour	Minute	Set hour(0x00-0x17) and minute
0x03	0x00	0x00	Report hour and minute
0x04	Month	Day	Set month(0x01-0x0C) and date(0x01-0x1F)
0x05	0x00	0x00	Report month and date

0x06	Year		Set year (2019 => 0x07E3)
0x07	0x00	0x00	Report year
Other	0x00	0x00	Invalid (no reaction)

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	—	—	Various	Various	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. As for RESP1, set 0x01(ACK) or 0x00(NAK) when setting and set received CMND1 when getting the report.
4. As for RESP2, set 0x01 when setting, and set received CMND2 when getting the report.
5. Set the value selected by SUB OP CODE to DATA1 and DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of SUB OP CODE

CMND1 of Send command	RESP1	RESP2	DATA1	DATA2	Description
0x00	0x01 or 0x00	0x01	0x00	0x00	Receive second (0x00-0x3B) and synchronize time
0x01	0x01	0x77	Second		Report second
0x02	0x01 or 0x00	0x01	0x00	0x00	Set hour(0x00-0x17) and minute
0x03	0x03	0x77	Hour	Minute	Report hour and minute
0x04	0x01 or 0x00	0x01	0x00	0x00	Set month(0x01-0x0C) and date(0x01-0x1F)
0x05	0x05	0x77	Month	Day	Report month and date
0x06	0x01 or 0x00	0x00	0x00	0x00	Set year (2019 => 0x07E3)
0x07	0x07	0x77	Year		Report year
Other	0x00	0x00	0x00	0x00	Invalid (no reaction)

5.2.11 Query Zoom Position (Standard)

A command that returns the zoom position (the value returned is the same as that returned by commands 5.3.2, “Query Zoom Position” and 5.3.23, “Query Manual Setting”).

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x55	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (for Response)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command（0x5D:Query Zoom Position Response）

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x5D	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x5D to RESP2.
4. Set requested value to DATA1 and DATA2 (Ex. 0xFF00 →DATA1:0xFF、DATA2、0x00)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

5.3 FF Extended Command (Original commands of this specification)

Commands specified by FUJIFILM in Extended Command

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.3.1 Query Focus Position

Command to get the focus position

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x81	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2(for Response)
5. Set the sum of ADDR to DATA2 in 8bit to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x81	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2.
4. Set requested value to DATA1 and DATA2 (Ex. 0xFF00 -> DATA1:0xFF、DATA2、0x00)
5. CKSM is the sum of ADDR to DATA2 in 8bit

5.3.2 Query Zoom Position

Command to get the zoom position (The data to be obtained by 5.2.11 Query Zoom Position command is the same)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x83	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (for Response)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x83	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2.
4. Set requested value to DATA1 and DATA2 (Ex. 0xFF00 →DATA1:0xFF、DATA2、0x00)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

5.3.3 <Reserved>

5.3.4 <Reserved>

5.3.5 Query Serial Number

Command to get Serial number

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x89	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7	8	9	10	11 - 17	18
	SYNC	ADDR	DATA1	DATA2	DATA3	DATA4	DATA5	DATA6	DATA7	DATA8	DATA9-DATA15	CKSM
	0xFF	—	—	—	—	—	—	—	—	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set Serial number as ASCII codes to DATA1 to DATA8
4. Set 0x00 to DATA9 to DATA15
5. Set the sum of ADDR to DATA15 in 8 bits to CKSM (* Note that it is different from Query Response)

5.3.6 Query Few Version

Command to get FW (Firmware) Version

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8B	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (For Response)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8B	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set major version to DATA and minor version to DATA2 (Ex. Ver1.10=DATA1:0x01,DATA2:0x10, Ver2.0A=DATA1:0x02,DATA2:0x0A)
5. Set the sum of ADDT to DATA2 in 8 bits to CKSM

5.3.7 Query Lens Status

Command to get the lens status

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8D	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (For Response)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8D	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set the lens status to DATA (See below)
5. Set 0x00 to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ DATA1 format

DATA1	Lens status	
0x00	No error	the lens work normally
0x01	Lens error	the zoom and/or the focus was stopped forcibly

5.3.8 Set Focus Position

Command to get the focus position

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8F	FOCUS MSB	FOCUS LSB	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. As for DATA1 and DATA2, see below
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

DATA1	Value
0x00～0xFF	FOCUS MSB

DATA2	Description
0x00～0xFF	FOCUS LSB

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	－	0x00	－

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.9 Set Manual Iris

Command to set F number

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x91	0x00	MANU_FNO	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. As for DATA2, see below
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

DATA2	F number (at the wide end)
0x01	F4
0x02	F4.5
0x03	F5.0
0x04	F5.6
0x05	F6.3
0x05	F7.1
0x07	F8
0x08	F9
0x09	F10

0x0A	F12
0x0B	F13
0x0C	F14
0x0D	F16
Others	F5.6

■ Received command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	－	0x00	－

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.10 Set Shutter Limit on Auto

Command to set the lowest limit of the shutter sped at AE

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x93	0x00	A_SHUT_LIM	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. As for DATA2, see below
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

DATA2	Description
0x00	Manual shutter : The value set by SetManualShutterSpeed command (0x00,0x95)
0x01	Auto shutter : Lowest limit 1/8 sec
0x02	Auto shutter : Lowest limit 1/15 sec
0x03	Auto shutter : Lowest limit 1/30 sec
0x04	Auto shutter : Lowest limit 1/60 sec
0x05	Auto shutter : Lowest limit 1/125 sec
Others	Auto shutter : Lowest limit 1/30 sec

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.11 Set Manual Shutter Speed

Command to set the shutter speed

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x95	0x00	MANU_SHUT	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. As for DATA2, see below
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

DATA2	Shutter sped (MANU_SHUT) [sec]
0x01	1
0x02	1/1.3
0x03	1/1.6
0x04	1/2
0x05	1/2.5
0x06	1/3
0x07	1/4
0x08	1/5
0x09	1/6

0x0A	1/8
0x0B	1/10
0x0C	1/13
0x0D	1/15
0x0E	1/20
0x0F	1/25
0x10	1/30
0x11	1/40
0x12	1/50
0x13	1/60
0x14	1/80
0x15	1/100
0x16	1/120
0x17	1/125
0x18	1/160
0x19	1/200
0x1A	1/250
0x1B	1/320
0x1C	1/400
0x1D	1/500
0x1E	1/640
0x1F	1/800
0x20	1/1000
0x21	1/1250

0x22	1/1600
0x23	1/2000
0x24	1/2500
0x25	1/3200
0x26	1/4000
0x27	1/5000
0x28	1/6400
0x29	1/8000
0x2A	1/10000
0x2B	1/12800
0x2C	1/16000
0x2D	1/20000
0x2E	1/32000
Others	1/30

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.12 Query Manual Shutter Speed

Command to get the shutter speed setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x97	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (For Response)
5. Set the sum of ADDT to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x97	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set the shutter speed value to DATA1 (See below)
5. Set 0x00 to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Shute speed value for DATA1

DATA1	Shutter speed value [sec]
0x01	1
0x02	1/1.3
0x03	1/1.6
0x04	1/2
0x05	1/2.5
0x06	1/3
0x07	1/4
0x08	1/5
0x09	1/6
0x0A	1/8
0x0B	1/10
0x0C	1/13
0x0D	1/15
0x0E	1/20
0x0F	1/25
0x10	1/30
0x11	1/40
0x12	1/50
0x13	1/60
0x14	1/80
0x15	1/100
0x16	1/120
0x17	1/125

0x18	1/160
0x19	1/200
0x1A	1/250
0x1B	1/320
0x1C	1/400
0x1D	1/500
0x1E	1/640
0x1F	1/800
0x20	1/1000
0x21	1/1250
0x22	1/1600
0x23	1/2000
0x24	1/2500
0x25	1/3200
0x26	1/4000
0x27	1/5000
0x28	1/6400
0x29	1/8000
0x2A	1/10000
0x2B	1/12800
0x2C	1/16000
0x2D	1/20000
0x2E	1/32000

5.3.13 Set Manual ISO

Command to set the ISO speed (sensitivity)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x99	0x00	MANU_ISO	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. As for DATA2, see below
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ ISO speed value (MANU_ISO for DATA2

DATA2	ISO speed (MANU_ISO)
0x01	ISO 400
0x02	ISO 500
0x03	ISO 640
0x04	ISO 800
0x05	ISO 1000
0x06	ISO 1250
0x07	ISO 1600
0x08	ISO 2000
0x09	ISO 2500

0x0A	ISO 3200
0x0B	ISO 4000
0x0C	ISO 5000
0x0D	ISO 6400
0x0E	ISO 8000
0x0F	ISO 10000
0x10	ISO 12800
0x11	ISO 25600
0x12	ISO 51200
0x13	ISO 102400
0x14	ISO 204800
0x15	ISO 409600
0x16	ISO 819200
Others	ISO 400

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.14 Query Manual ISO

Command to get the ISO speed value

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x9B	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (for Response)
5. Set the sum of ADDT to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x9B	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set Manual ISO speed value to DATA1 (see below)
5. Set 0x00 to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ ISO speed value for DATA1

DATA1	ISO speed
0x01	ISO 400
0x02	ISO 500
0x03	ISO 640
0x04	ISO 800
0x05	ISO 1000
0x06	ISO 1250
0x07	ISO 1600
0x08	ISO 2000
0x09	ISO 2500
0x0A	ISO 3200
0x0B	ISO 4000
0x0C	ISO 5000
0x0D	ISO 6400
0x0E	ISO 8000
0x0F	ISO 10000
0x10	ISO 12800
0x11	ISO 25600
0x12	ISO 51200
0x13	ISO 102400
0x14	ISO 204800
0x15	ISO 409600
0x16	ISO 819200

5.3.15 Query Manual Iris

Command to get the F value of the iris

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x9D	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (for Response)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x9D	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set F value of the iris to DATA1 (See below)
5. Set 0x00 to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ F value of iris for DATA1

DATA1	F value at the wide end
0x01	F4
0x02	F4.5
0x03	F5.0
0x04	F5.6
0x05	F6.3
0x06	F7.1
0x07	F8
0x08	F9
0x09	F10
0x0A	F12
0x0B	F13
0x0C	F14
0x0D	F16

5.3.16 <Reserved>

5.3.17 <Reserved>

5.3.18 <Reserved>

5.3.19 <Reserved>

5.3.20 <Reserved>

5.3.21 <Reserved>

5.3.22 <Reserved>

5.3.23 Query Manual Setting (Query Manual Setting Response)

Command to get various setting status

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0xAD	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the query target CMND2 to DATA1 (the CMND2 values, see below)
4. Set 0x00 to DATA2
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0xAF	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to RESP1
4. Set 0xAF to RESP2
5. Set requested value to DATA1 and DATA2 (See below for the value).
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
0x25	0x00	ZOOM_SPEED	*Returns* the zoom speed.
0x27	0x00	FOCUS SPEED	*Returns* the focus speed.
0x2B	0x00	AUTO F_CTL	AF On / Off / Quick AF
0x2D	0x00	AUTO I_CTL	Auto iris On / Off
0x2F	0x00	AGC_CTL	AGC standard/off/Hyper
0x31	0x00	BLC_CTL	Backlight compensation On / Off
0x4F	ZOOM MSB	ZOOM LSB	*Returns* the zoom position.
0x67	0x00	SET B_RARE	Set Remote baud rate.
0x8F	FOCUS MSB	FOCUS LSB	*Returns* the focus position.
0x91	0x00	MANU_FNO	F value of iris
0x93	0x00	A_SHUT_LIM	*Returns* the minimum shutter speed for autoexposure.
0x95	0x00	MANU_SHUT	*Returns* the shutter speed.
0x99	0x00	MANU_ISO	*Returns* the ISO sensitivity.
Others			Invalid

5.4 Original Command1 (Original commands of this specification: No.1: Photo Setting)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.4.1 Set AF Area

Command to set AF area

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x03	0x00	FOCUS AREA	—

1. Set 0x00 to DATA1
2. Set 0 to 9 as FUCUS AREA to DATA2

■ Argument of FOCUS AREA

DATA2	Area
0x00	Center (Fixed)
0x01	Upper left
0x02	Upper center
0x03	Upper right
0x04	Middle left
0x05	Middle of middle
0x06	Middle right
0x07	Lower left
0x08	Lower center
0x09	Lower right
Others	Center (Fixed)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	－	0x00	－

5.4.2 Set AF Sensitivity

Command to set sensitivity at AF

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x05	0x00	SENS GAIN	—

1. Set 0x00 to DATA1
2. Set 1 to 3 as SENS GAIN to DATA2

■ Argument of SENS GAIN

DATA2	Sensitivity
0x01	Low
0x02	Middle
0x03	High
Others	Low

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.3 One-push AF

Command to execute One-push AF (Valid when Auto focus is Off)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x07	0x00	ONE_AF	—

1. Set 0x00 to DATA1
2. Set ONE_AF to DATA2

■ Argument of ONE_AF

DATA2	Operation
0x00	Execute One-push AF
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.4 <Reserved>

5.4.5 <Reserved>

5.4.6 Set Auto Day/Night Control Mode

Set threshold of Day/Night

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x0D	0x00	DN MODE	—

1. Set 0x00 to DATA1
2. Set 0 t0 3 as DN MODE to DATA2

■ Argument of DN MODE

DATA2	Threshold
0x01	Dark
0x02	Middle
0x03	Bright
Others	Middle

Note: This command has been retained following firmware version 1.60 for backward compatibility, but the setting is stored separately from Original Command 9 (No. 9, “DayNight Setting Ex”). When executed in firmware versions later than 1.60, this command executes with the values for the existing control (Original Command 9).

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.7 Set Manual Day/Night

Command to set Day / night manually

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x0F	0x00	DN SET	—

1. Set 0x00 to DATA1
2. Set 1 to 4 as DN SET to DATA2
3. Set the sum of 2nd to 6th Bytes in 8 bit to CKSM

■ Argument of DN SET

DATA2	Day /Night Setting
0x00	Auto
0x01	Day
0x02	Night
Others	Day

Note: This command has been retained following firmware version 1.60 for backward compatibility, but the setting is stored separately from Original Command 9 (No. 9, “DayNight Setting Ex”). When executed in firmware versions later than 1.60, this command executes with the values for the existing control (Original Command 9).

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.8 Set Infrared WaveLength

Command to set Infrared wavelength

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x11	0x00	IWL SET	—

1. Set 0x00 to DATA1
2. Set 1 to 4 as IWL SET to DATA2

■ Argument of IWL SET

DATA2	Description
0x00	Visible light
0x01	950 nm
0x02	940 nm
0x03	850 nm
0x04	808 nm
Others	Visible light

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.9 Set OIS Mode

Command to set ON / OFF of OIS and EIS

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x13	0x00	OIS MODE	—

1. Set 0x00 to DATA1
2. Set 0 to 3 as OIS MODE to DATA2

■ Argument of OIS MODE

DATA2	Setting
0x01	AUTO(default)
0x02	Only OIS ON
0x03	Only EIS ON
0x04	Off
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.10 <Reserved>

5.4.11 Set Photo Mode Preset

Command to set Photo mode preset

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x17	0x00	PHOTO_PRST	—

1. Set 0x00 to DATA1
2. Set 1 or 2 as PHOT_PRST to DATA2

■ Argument of PHOTO_PRST

DATA2	Description
0x01	Surveillance (Focus on resolution)
0x02	Movie (General image quality)
Others	Surveillance

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.12 Set DayNight Control by External

Command to switch Day / Night by DayNight trigger signal forcibly

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x19	0x00	EX_TGER	—

1. Set 0x00 to DATA1
2. Set 1 or 2 as EX_TGER to DATA2

■ Argument of EX_TGER

DATA2	Description
0x01	On (DayNight trigger: valid) VLC filter
0x02	On (DayNight trigger : valid) CLEAR filter (Raw glass)
0x03	Off (DayNight trigger : invalid)
Others	Off (DayNight trigger : invalid)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.13 <Reserved>

5.4.14 Query Photo Setting (Query Photo Setting Response)

Command to get the camera setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x1D	—	0x00	—

1. Set CMND2 of question target to DATA1 (See below for the contents of CMND2)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x1F	—	—	—

1. Set 0xF0 to RESP1
2. Set 0x1F to RESP2
3. Set the value according to the request to DATA1 and DATA2 (See below for the response)

CMND2 set by Send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
0x03	0x00	0–9	*Returns* the AF area.
0x05	0x00	1–3	*Returns* the ISO sensitivity for autofocus.

0x07	0x00	AF_STATUS	AF status when One-Push AF 0x00: Finished 0x01 In process 0xFF: Abnormally
0x0D	0x00	0–3	*Returns* the Day/Night threshold.
0x0F	0x00	1–4	*Returns* the manual Day/night setting.
0x11	0x00	0–6	*Returns* the IR filter.
0x13	0x00	0–3	*Returns* OIS status (on/off).
0x17	0x00	1–2	*Returns* the shooting mode preset.
0x19	0x00	1–2	Day / Night swatch by DayNight trigger
Others			Invalid

5.5 Original Command2 ((Original commands of this specification: No.2: Image Quality Parameter)

An extended command unique to this specification.

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.5.1 Set VLC Filter

Command to set the VLC (Visible Light Cut) filter

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x21	0x00	VLC FL	—

1. Set 0x00 to DATA1
2. Set VLC FL to DATA2

■ Argument of VLC FL

DATA2	Setting
0x00	Off
0x01	On
0x02	4th filter (Optional filter) *
Others	Off

* Please contact a sales representative for details.

Note: This command has been retained following firmware version 1.60 for backward compatibility, but the setting is stored separately from Original Command 9 (No. 9, “DayNight Setting Ex”). When executed in firmware versions later than 1.60, this command executes with the values for the existing control (Original Command 9, “Set Optical Filter Day/Night”).

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.2 Set WideDynamicRange

Command to set the dynamic range

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x23	0x00	D_RANGE	—

1. Set 0x00 to DATA1
2. Set D_RANGE to DATA2

■ Argument of D_RANGE

DATA2	Description
0x01	Off
0x02	1
0x03	2
Other	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.3 <Reserved>

5.5.4 Set DeHeatHaze Mode

Command to change De-heat haze mode

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x27	0x00	DE_HEAT_MODE	—

1. Set 0x00 to DATA1
2. Set DE_HEAT_MOD to DATA2

■ Argument of DE_HEAT_MODE

DATA2	Description
0x00	Off
0x01	1
0x02	2
0x03	3
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.5 Set Defogging Mode

Command to change De-fogging mode

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x29	0x00	DE_FOG_MODE	—

1. Set 0x00 to DATA1
2. Set DE_FOG_MODE to DATA2

■ Argument of DE_FOG

DATA2	Description
0x00	Off
0x01	1
0x02	2
0x03	3
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.6 Set Brightness Level

Command to set the brightness

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x2B	0x00	BRIGHT_LV	—

1. Set 0x00 to DATA1
2. Set BRIGHT_LV to DATA2

■ Agreement of BRIGHT_LV

DATA2	Description
0x01	1: Darkest
0x02	2
0x03	3
0x04	4
0x05	5
0x06	6
0x07	7
0x08	8
0x09	9
0x0A	10
0x0B	11 (Center : default)
0x0C	12

0x0D	13
0x0E	14
0x0F	15
0x10	16
0x11	17
0x12	18
0x13	19
0x14	20
0x15	21 : Brightest
Others	11

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.7 Set Contrast Level

Command to set the contrast

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x2D	0x00	CONT_LV	—

1. Set 0x00 to DATA1
2. Set CONT_LV to DATA2

■ Argument of CONT_LV

DATA2	Description
0x01	1 : Lowest
0x02	2
0x03	3
0x04	4
0x05	5 : Highest
Others	3

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.8 Set ColorSaturation Level

Command to set the color saturation level

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x2F	0x00	COLOR_ST_LV	—

1. Set 0x00 to DATA1
2. Set COLOR_ST_LV to DATA2

■ Argument of COLOR_ST_LV

DATA2	Description
0x01	1 : Lowest
0x02	2
0x03	3
0x04	4
0x05	5 : Highest
Others	3

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.9 Set Sharpness Level

Command to set the sharpness

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x31	0x00	SHARP_LV	—

1. Set 0x00 to DATA1
2. Set SHARP_LV to DATA2

■ Argument of SHARP_LV

DATA2	Description
0x01	1 : Softest
0x02	2
0x03	3
0x04	4
0x05	5 : Hardest
Others	4

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.10 Set ColorTemperature on WhiteBalance

Command to set the color temperature on the white balance

This command becomes effective when ColorTemperature (0x06) is set to DATA2 by Set Select WhiteBalance.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x33	0x00	C_WB_TEMP	—

1. Set 0x00 to DATA1
2. Set C_WB_TMP to DATA2

■ Argument of C_WB_TMP

DATA	Description
0x01	3000K
0x02	5000K
0x03	9000K
Others	5000K

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.11 Set Select WhiteBalance

Command to set the white balance

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x35	0x00	WB_SEL	—

1. Set 0x00 to DATA1
2. Set WB_SEL to DATA2

■ Argument of WB_SEL

DATA2	Description
0x01	Auto
0x02	Custom1 (Read preset, which can be set only by SDI menu)
0x03	Custom2 (Read preset, which can be set only by SDI menu)
0x04	Day
0x05	Cloud
0x06	ColorTemperature (Set the color temperature by Set ColorTemperature on WhiteBalance)
0x07	Auto (white priority)
Others	Auto

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.12 Set Digital Zoom

Command to switch the digital zoom

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x37	0x00	D_ZOOM	—

1. Set 0x00 to DATA1
2. Set D_ZOOM to DATA2

■ Argument of D_ZOOM

DATA2	Digital zoom
0x00	Off
0x01	On: Conventional Digital Zoom (Crop optical tele end)
0x02	Crop: Cropped at any position from wide end to tele end. Set magnification with Set Digital Zoom Ex.
Others	Off

■ Receive mode

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.13 Set NR Level

Command to set the noise reduction level

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x39	0x00	NR_LEV	—

1. Set 0x00 to DATA1
2. Set NR_LEV to DATA2

■ Argument of NR_LEV

DATA2	Level
0x01	1: Weak
0x02	2: Middle
0x03	3: Strong
Others	2: Middle

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.14 <Reserved>

5.5.15 Query ImageQuality Setting (Query ImageQuality Setting Response)

Command to get the image quality setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x3D	—	0x00	—

1. Set CMND2 of question target to DATA1 (See below for the content of CMND2)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x3F	—	—	—

1. Set 0xF0 to RESP1
2. Set 0x3f to RESP2
3. Set values according to the requested content in DATA1 and DATA2 (see below for the response content)

CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
0x21	0x00	0–2	*Returns* the VLC.
0x23	0x00	1–3	*Returns* the dynamic range.
0x27	0x00	0–5	*Returns* the heat-haze reduction setting.
0x29	0x00	0–5	*Returns* the fog reduction setting.
0x2B	0x00	1–5	*Returns* brightness.
0x2D	0x00	1–5	*Returns* contrast.
0x2F	0x00	1–5	*Returns* the saturation setting.
0x31	0x00	1–5	*Returns* sharpness.
0x33	0x00	C_WB_TEMP	*Returns* the color temperature.
0x35	0x00	1–6	*Returns* white balance.
0x37	0x00	0–2	*Returns* digital zoom.
0x39	0x00	1–3	*Returns* noise reduction.
Others			Invalid

5.6 Original Command2 (Original commands of this specification: No.2: ImageQuality Parameter)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.6.1 <Reserved>

5.6.2 Set DayTime Display

Command to set data and time

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x43	0x00	TIME_DISP SW	—

1. Set 0x00 to DATA1
2. Set TIME_DISP SW to DATA2

■ Argument of TIME_DISP SW

DATA2	SW
0x00	Off
0x01	On
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.3 Set DisplayPosition of DayTime

Command to set the display position of DateTime

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x45	0x00	TIME_DISP POS	—

1. Set 0x00 to DATA1
2. Set TIME_DISP POS to DATA2

■ Argument of TIME_DISP POS

DATA2	Position
0x01	Upper right
0x02	Lower right
0x03	Upper left
0x04	Lower left
Others	Upper right

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.4 Set Title Display

Command to display the title

* The title can be set by SDI menu. See the operation manual.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x47	0x00	TITLE_DISP SW	—

1. Set 0x00 to DATA1
2. Set TITLE_DISP SW to DATA2

■ Argument of TITLE_DISP SW

DATA2	Display
0x00	Off
0x01	On
Other	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.5 <Reserved>

5.6.6 Set DisplayPosition of Title

Command to set the position of the title display

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x4B	0x00	TITLE_DISP POS	—

1. Set 0x00 to DATA1
2. Set TITLE_DISP POS to DATA2

■ Argument of TITLE_DISP POS

DATA2	Position
0x01	Upper right
0x02	Lower right
0x03	Upper left
0x04	Lower left
Others	Upper right

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.7 Set ID Display

Command to display ID

* The ID can be set by SDI menu. See the operation manual.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x4D	0x00	DISP_ID SW	—

1. Set 0x00 to DATA1
2. Set DISP_ID SW to DATA2

■ Argument of DISP_ID SW

DATA2	Display
0x00	Off
0x01	On
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.8 Set DisplayPosition of ID

Command to set the display position of ID

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x4F	0x00	ID_DISP POS	—

1. Set 0x00 to DATA1
2. Set ID_DISP POS to DATA2

■ Argument of ID_DISP POS

DATA2	Position
0x01	Upper right
0x02	Lower right
0x03	Upper center
0x04	Lower center
0x05	Upper left
0x06	Lower left
Others	Upper right

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.9 Set Center Position Display

Command to display the mark in the middle

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x51	0x00	DISP_C_POS SW	—

1. Set 0x00 to DATA1
2. Set DISP_C_POS SW to DATA2

■ Argument of DISP_C_POS SW

DATA2	Display
0x00	Off (Default)
0x01	On
Others	Off

* Display is OFF after turn on (does not hold the previous setting)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.10 <Reserved>

5.6.11 SetAntialiasing

Command to control the anti-aliasing process of OSD on/off

■Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x55	0x00	ANTIALIASING SW	—

1. Set 0x00 to DATA1
2. Set ANNTIALIASING SW to DATA2

■Argument of ANTIALIASING SW

DATA2	SW
0x00	Off
0x01	On (Default)
Other	On

■Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.12 <Reserved>

5.6.13 <Reserved>

5.6.14 <Reserved>

5.6.15 Query Display Setting (Query Display Setting Response)

Command to get the display setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x5D	—	0x00	—

1. Set the query target CMND2 to DATA1 (the CMND2 values, see below)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x5F	—	—	—

1. Set 0xF0 to RESP1
2. Set 0x5F to RESP2
3. Set requested value to DATA1 and DATA2 (the requested values, see below)

CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
0x43	0x00	0–1	*Returns* the date and time.
0x45	0x00	1–4	*Returns* the date and time display position.
0x47	0x00	0–1	*Returns* title display status.
0x4B	0x00	1–4	*Returns* the title display position.
0x4D	0x00	0–1	*Returns* ID display status.
0x4F	0x00	1–6	*Returns* the ID display position.
0x51	0x00	0–1	*Returns* the display status of the center reticle.
0x53	0x00	0–1	Display of the zoom bar and AF fram ON (Display): 1 OFF (No display): 0 (Display ON/OFF setting is doen be SetBack MCD 0xF0)
0x55	0x00	0–1	Anti-alias status for the OSD ON: 1 OFF: 0
Others			Invalid

5.7 Original Command 4 (Original commands of this specification: No...4: Operation Setting)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.7.1 Set Display Mode of time

Command to switch the time display mode (24h ⇔ 12h)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x61	0x00	HOUR12_24 SEL	—

1. Set 0x00 to DATA1
2. Set HOUR12_24 SEL to DATA2

■ Argument of HOUR12_24 SEL

DATA2	Display mode
0x01	24h
0x02	12h
Others	24h

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	*0x00*	—

5.7.2 Set DisplayMode of YMD

Command to switch the YMD display mode

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x63	0x00	YMD SEL	—

1. Set 0x00 to DATA1
2. Set YMD SEL to DATA2

■ Argument of YMD SEL

DATA2	Display mode
0x01	Y-M-D
0x02	M-D-Y
0x03	D-M-Y
0x04	Y/M/D
0x05	M/D/Y
0x06	D/M/Y
Others	Y-M-D

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.3 <Reserved>

5.7.4 Set Video Mode

Command to switch the video mode (NTSC⇔PAL)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x67	0x00	VIDEO MODE	—

1. Set 0x00 to DATA1
2. Set VIDEO MODE to DATA2

■ VUDEO MODE 引数

DATA2	Video mode
0x01	NTSC
0x02	PAL
Others	NTSC

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.5 Set HD Format

Command to switch the image size of HD and the frame rate

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x69	0x00	HD_FORMAT SW	—

1. Set 0x00 to DATA1
2. Set HD_FORMAT SW to DATA2

■ Argument of HD_FORMAT SW

DATA2	Image size (Frame rate)
0x01	1080p (30p)
0x02	720p (60p)
0x03	480p (60p)
Others	1080p (30p)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.6 Set VideoDisplay Mode

Command to set the display mode of the video

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x6B	0x00	VIDEO_D_MODE	—

1. Set 0x00 to DATA1
2. Set VIDEO_D_MODE to DATA2

■ Argument of VIDEO_D_MODE

DATA2	Display mode
0x01	side cut
0x02	letter box
0x03	squeeze
Others	side cut

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.7 <Reserved>

5.7.8 Set RS485 ID

Command to set ID for RS485

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x6F	0x00	RS485_ID	—

1. Set 0x00 to DATA1
2. Set RS485_ID to DATA2 in 16bit binary

■ Argument of RS485_ID

DATA2	Setting
1～31	RS485 ID(Default : 7)
Others	7

* Power OFF→ON sequence is required to reflect the settings

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.9 <Reserved>

5.7.10 Set Termination for RS485

Command to switch the termination of RS485

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x73	0x00	TEMINAT SW	—

1. Set 0x00 to DATA1
2. Set TEMINAT SW to DATA2

■ Argument of TEMINAT SW

DATA2	Switch
0x00	Off
0x01	On
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.11 <Reserved>

5.7.12 Set RecordingMode on Scared

Command to set SD overwrite recording when card Full

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x77	0x00	SD_RECORD SW	—

1. Set 0x00 to DATA1
2. Set SD_RECORD SW to DATA2

■ Argument of SD_RECORD SW

DATA2	Setting
0x01	Overwrite
0x02	Stop recording (There is on/off setting to display the remaining amount)
Others	Overwrite

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.13 SetDisplay Scared Capacity Remaining

Command to set the display of remaining of SD card capacity

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x79	0x00	DISP_CARD_SW	—

1. Set 0x00 to DATA1
2. Set DISP_CARD_SW to DATA2

■ Argument of DISP_CARD_SW

DATA2	Setting
0x01	Display remaining of SD Card capacity : ON
0x02	Display remaining of SD Card capacity : OFF (Even if it is OFF, the remaining time will be displayed when it reaches 30 minutes.)
Others	Display remaining of SD Card capacity : ON

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.14 Format SDcard

Command to format SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x7B	0x00	SD_FORMAT	—

1. Set 0x00 to DATA1
2. Set SD_FORMAT to DATA2

■ Argument of SD_FORMAT

DATA2	Format
0x00	Format SD card
Others	Do nothing

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.15 Download Firmware

Command used to update FW. SX800 and SX801 cannot update FW via RS485. Therefore, even if SX800 and SX801 are installed at a remote distance and controlled by RS485, FW update needs to use Ethernet I / F.

When this command is sent, the camera automatically reboots and starts up in the simple WebUI mode, and only the FW download operation via the Ethernet I / F is enabled (Note that the IP connection settings return to the default values when you issue this command in FW version 1.30 or earlier. If you issue this command in the FW version 1.40, the settings are maintained.). After the FW download is completed, reboot automatically again and restart in Pelco mode.

* Note: If this command is sent, it will not be possible to return via RS485, so be careful when sending the command.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x7D	0x00	FW_DL	—

1. Set 0x00 t0 DATA1
2. Set FW_DL to DATA2

■ Argument of FW_DL

DATA2	Action
0x01	Update FW
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.16 Recode LogData on SDcard

Command to copy the log data on the memory to SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x7F	0x00	LOG_COPY_SD	—

1. Set 0x00 to DATA1
2. Set LOG_COPY_SD to DATA2

■ Argument of LOG_COPY_SD

DATA2	Action
0x00	Does not copy
0x01	Copy the log to SD card
Others	Does not copy

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.17 Preset parameters

Command to reset parameters to factory default

* After initializing parameters other than IP settings, the camera sends a receive command and restarts automatically.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x81	0x00	PRESET	—

1. Set 0x00 to DATA1
2. Set PRESET to DATA2

■ Argument of PRESET

DATA2	Action
0x00	Reset parameters other than IP setting
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.18 Reboot

Command to reboot

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x83	0x00	REBOOT	—

1. Set 0x00 to DATA1
2. Set REBOOT to DATA2

■ Argument of REBOOT

DATA2	Action
0x01	Reboot
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.19 Set Language

Command to set the language

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x85	0x00	LANGUAGE	—

1. Set 0x00 to DATA1
2. Set LANGUAGE to DATA2

■ Argument of LANGUAGE

DATA2	Language
0x00	English
0x01	French
0x02	Invalid
0x03	Japanese
Others	English

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.20 <Reserved>

5.7.21 <Reserved>

5.7.22 <Reserved>

5.7.23 Query Operation Setting (Query Operation Setting Response)

Command to get the camera setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x8D	—	0x00	—

1. Set the query target CMND2 to DATA1 (the CMND2 values, see below)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x8F	—	—	—

1. Set 0xF to RESP1
2. Set 0x8F to RESP2
3. Set requested value to DATA1 and DATA2 (the requested values, see below)

CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
0x61	0x00	1–2	Data/ Time display mode(24h⇔12h)
0x63	0x00	1–6	YMD mode
0x67	0x00	1–2	Video Mode (NTSC⇔PAL)
0x69	0x00	1–4	HD image size and its frame rate
0x6B	0x00	1–3	*Returns* the video display mode.
0x6F	0x00	0–255	*Returns* the RS485 ID.
0x71			Invalid
0x73	0x00	0–1	Termination of RS485
0x77	0x00	1–2	Overwrite when SD card is full
0x79	0x00	1–2	Display the remaining of SD card capacity
0x7B	0x00	FOMAT_STATUS	Status of formatting SD card 0x00: Completed 0x01: In process 0xFF: Error
0x7F	0x00	0–1	Copy the log data to SD card
0x81	0x00	0	Reset parameters to factory default
0x85	0x00	0–3	*Returns* the language setting.
0x8B	0x00	SD_CARD_STATUS	Status of the SD card (Status of SD_CARD_STATUS is below)
Others			Invalid

※ Status of SD_CARD_STATUS

SD_CARD_STATUS	Status
0x00	Normal
0x01	SD card error
0x02	Unformatted
0x03	Protected
0x04	File system error
0x05	Full
0x06	No card

◆ Status of formatable card
0x00:Normal
0x01:SD card error
0x02:Unformatted
0x04: File system error
0x05: Full
※ However, formatting may fail when status were 0x01 or 0x04

◆ Video recordable status
0x00:Normal

◆ Video playable status
0x00:Normal
0x03:Protected
0x05: Full

5.8 Original Command 5 (Original commands of this specification: No...5: SET KEY)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.8.1 SetEncodeMode

Command to set the video encode format

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x91	0x00	ENCODING	—

1. Set 0x00 to DATA1
2. Set ENCODING to DATA2

■ Argument of ENCODING

DATA2	Encode format
0x01	H.264,
0x02	MJPEG
0x03	MPEG4
Others	H.264

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.2 Record LiveView on SDcard

Command to record the live view into SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x93	0x00	LV_RECORD	—

1. Set 0x00 to DATA1
2. Set LV_RECORD to DATA2

■ Argument of LV_RECORD

DATA2	Record
0x00	On
0x01	Off
Others	On

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.3 Set 1st file of playing Movie

Command to play the first file

How to use:
First, read out the total number of movie in the SD card by Query Number of Movies on SDcard command (0xF0, 0xB1), and then set the target frame.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x95	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

* Set the file index number to playback to F_NO

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

What is File index number:

The camera generates a table of file index numbers (F_NO) on the memory so that the latest file is 0x0001, only for the files recorded by the SX 800 and SX801 at startup. When the file is deleted, F_NO of the deleted file becomes an empty number until the file number table is updated next time the power is turned on.

5.8.4 Play Movie from SDcard

Command to set Play/Stop mode of the video file in the SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x97	0x00	PLAY_SET	—

1. Set 0x00 to DATA1
2. Set PLAY_SET to DATA2

■ Argument of PLAY_SET

DATA2	Mode
0x00	Stop (Playback standby state: Thumbnail or inclusion JPEG displayed)
0x01	One frame playback
0x02	Continuous playback (Play from the current position in order of recording time. After the last frame, play the oldest frame in the card.)
0x03	Pause (Display freeze)
0x04	Playback again
Others	Stop (Playback standby state: Thumbnail or inclusion JPEG displayed)

* Default is 0x00。When transitioning from the movie mode to the playback mode, it is always 0x00, and the thumbnail or included JPEG display of the latest time stamp is displayed for the frame.

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.5 Delete Movie from SDcard

Command to set the target movie number to delete from SD card

How to use:
First, read out the total number of movie in the SD card by Query Number of Movies on SDcard command (0xF0, 0xB1), and then set the target frame.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x99	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

■ Argument of DISP_C_POS SW

DATA1 + DATA2	
File index number	Delete the movie of the file index number
0x0000	All delete

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.6 Select Movie mode Play mode

Command to switch Movie mode/Playback mode

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x9B	0x00	MODE_SW	—

1. Set 0x00 to DATA1
2. Set MODE_SW to DATA2

■ Argument of MODE_SW

DATA2	Mode
0x01	Movie mode (When playing back the movie, playback is interrupted and transit to Movie mode)
0x02	Play back mode (When recording a movie, issue this command after stopping movie by 5.8.2 Record LiveView on SDcard (0xF0, 0x93))
Others	Movie mode

* Default is 0x01

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.7 <Reserved>

5.8.8 <Reserved>

5.8.9 <Reserved>

5.8.10 <Reserved>

5.8.11 <Reserved>

5.8.12 Set SDI ON MENU OK

Command to switch ON/OFF of SDI display and execute MENU OK command (* this command is available at Pelco Slave mode)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xA7	0x00	SDI_ON	—

1. Set 0x00 to DATA1
2. Set SDI_ON to DATA2

■ Argument of SDI_ON

DATA2	Mode
0x00	Off (SDI OFF and MENU OFF)
0x01	On (Execute instead of MENU OK key)
Others	Off (SDI OFF and MENU OFF)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.13 Set Direction

Command to move cursor (* this command is available at Pelco Slave mode)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xA9	0x00	CURSOR	—

1. Set 0x00 to DATA1
2. Set CURSOR to DATA2

■ CURSOR 引数

DATA2	Direction
0x01	Up
0x02	Down
0.03	Left
0x04	Right
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.14 Set Back CMD

Command to execute MENU BACK (* this command is available at Pelco Slave mode)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xAB	0x00	M_BACK	—

1. Set 0x00 to DATA1
2. Set M_BACK to DATA2

■ Argument of M_BACK

DATA2	Action
0x00	Invalid
0x01	MENU BACK
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.15 Query Key Setting (Query Key Setting Response)

Command to get the previous key setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xAD	—	0x00	—

1. Set the query target CMND2 to DATA1 (the CMND2 values, see below)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xAF	—	—	—

1. Set 0xF0 to RESP1
2. Set 0xAF to RESP2
3. Set requested value to DATA1 and DATA2 (See below for the value).

CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
0x91	0x00	1–2	*Returns* the video encoding.
0x93	0x00	0–1	*Returns* live-feed-to-memory-card recording status. 0x00 On 0x01 Off
0x95	number1	number2	Play the first file
0x97	0x00	0–4	*Returns* the status of video playback from the memory card. 0x00 Stop 0x01 One frame playback 0x02 Continuous playback 0x03 Pause (Display freeze) 0x04 Playback again
0x99	number1	number2	*Returns* the number of the frame to be deleted from the memory card.
0x9B	0x00	1–2	*Returns* the video/playback mode toggle status.
0xA7	0x00	0–1	*Returns* SDI display status (on/off).
0xA9	0x00	1–4	*Returns* cursor movement (0x00 when no cursor history).
0xAB	0x00	0–1	*Returns* MENU BACK status.
Others			Invalid

5.9 Original Command 6 (Original commands of this specification : No. 6 : Query SDcard)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.9.1 Query Number of Movies on SDcard (Query Number of Movies on SDcard Response)

Command to get the number of movie files in the SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB1	0xB3	0x00	—

1. Set the query target CMND2 to DATA1 (0xB3)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB3	NUMBER MSB	NUMBER LSB	—

1. Set 0xF0 to RESP1
2. Set 0xB3 to RESP2
3. Set NUMBER MSB to DATA1
4. Set NUMBER LSB to DATA2

5.9.2 Query Year of Movie on SDcard (Query Year of Movie on SDcard Response)

Command to get the recorded year of the movie file in the SD card

How to use:
First, read out the total number of movie in the SD card by Query Number of Movies on SDcard command (0xF0, 0xB1), and then set the target frame.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB5	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

   * F_NO is the File Index number of the movie to playback

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB7	F_YY MSB	F_YY LSB	—

1. Set 0xF0 to RESP1
2. Set 0xB7 to RESP2
3. Set F_YY MSB to DATA1
4. Set F_YY LSB to DATA2

   * F_YY is the recorded year represented by a 4-digit hexadecimal number (2 Bytes)

5.9.3 Query MonthDay of Movie on SDcard (Query MonthDay of Movie on SDcard Response)

Command to get the recorded date and month of the movie file in the SD card

How to use:

First, get the total number of the files by Query Number of Movies on SDcard(0xF0、0xB1) command, then set the target file

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB9	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

* F_NO is the File Index number of the movie to playback

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xBB	F_MM	F_DD	—

1. Set 0xF0 to RESP1
2. Set 0xB7 to RESP2
3. Set F_MM to DATA1
4. Set F_DD to DATA2

* F_MM and F_DD are the recorded month and date

5.9.4 Query HourMinute of Movie on SDcard (Query HourMinute of Movie on SDcard Response)

Command to get the recorded time of day (24h notation) of the movie file in the SD card

How to use:
First, read out the total number of movie in the SD card by Query Number of Movies on SDcard command (0xF0, 0xB1), and then set the target frame.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xBD	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

   * Fanons File Index number of the requested movie

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xBF	F_HH	F_MM	—

1. Set 0xF0 to RESP1
2. Set 0xB7 to RESP2 は 0xB7
3. Set F_HH(Hexadecimal) to DATA1
4. Set F_MM(Hexadecimal)to DATA2

   * F_HH and F_MM are the recorded time of day (hour and minutes in 24h notation)

5.10 Original Command7(In-House Custom Parameter No. 7: Query LogData)

An extended command unique to this specification.

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command:

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Extended Response2) (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.10.1 Query LogData (Query LogData Response)

Command to get the LogData of the camera.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xD1	0xD3	LOG_TYPE	—

1. Set the query target CMND2 to DATA1 (0xD3)
2. Set LOG_TYPE to DATA2

■ LOG_TYPE arguments

DATA2 set by send command	Purpose	DATA1,DATA2 (LOG_DAT) set by the receiving command
0x01	Zoom	Cumulative number of moving pulses
0x02	Focus	Cumulative number of moving pulses
0x03	PowerOnTime	Cumulative energization time

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xD3	LOG_DAT	LOG_DAT	—

1. Set 0xF0 to RESP1
2. Set 0xD3 to RESP2
3. Set DATA1 and DATA2 to values according to the requested content.

5.11 Original Command 8 (In-House Custom Parameter No. 8: ImageQuality Parameter Fine)

An extended command unique to this specification. The checksum (CKSM) calculation is omitted from this chapter, as we have adopted the method outlined for Pelco-D in Chapter 3. New commands have been added for fine control of image quality parameters. *The command group described in Chapter 5.11 are available from version 2.00 (2022.2) of the firmware for both the SX800 and SX801*.

(0) Command sent:

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(1) Response (General Response):

Set the CKSM to the 8-bit sum of ALARMS and the value returned for CKSM.

(2) Response (Extended Response):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(3) Response (Query Response):

Set the CKSM to the 8-bit sum of ADDR through DATA15 (*in-house custom parameter*).

(4) Response (Extended Response 2, an in-house custom parameter):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

5.11.1 <Reserved>

5.11.2 <Reserved>

5.11.3 <Reserved>

5.11.4 <Reserved>

5.11.5 <Reserved>

5.11.6 Set Brightness Level Fine

A command used to set brightness.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xEB	0x00	BRIGHT_LV	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets BRIGHT_LV.

■ BRIGHT_LV arguments

DATA2	Description
0x01–0x64	1 – 100
Other	50

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.7 Set Contrast Level Fine

A command used to set contrast.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xED	0x00	CONT_LV	—

1. DATA1 is fixed at 0x0.
2. DATA2 sets CONT_LV.

■ CONT_LV arguments

DATA2	Description
0x01-0x64	1 – 100
Other	50

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.8 Set ColorSaturation Level Fine

A command used to set color saturation.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xEF	0x00	COLOR_ST_LV	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets COLOR_ST_LV.

■ COLOR_ST_LV arguments

DATA2	Description
0x01-0x64	1 – 100
Other	50

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.9 Set Sharpness Level Fine

A command used to set sharpness.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xF1	0x00	SHARP_LV	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets SHARP_LV.

■ SHARP_LV arguments

DATA2	Description
0x01–0x64	1 – 100
Other	20 / 80 *

* Varies with the setting for 5.4.11, “Set Photo Mode Preset” (video/surveillance).

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.10 <Reserved>

5.11.11 Set WhiteBalance Shift Red Fine

A command used to set the white-balance shift R component for the current white balance mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xF5	0x00	WB_SHIFT_R	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets C_WB_TMP.

■ WB_SHIFT_R arguments

DATA2	Description
0x77-0x89	0x77(-9) – 0x80(0) – 0x89(+9)
Other	0x80

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.12 Set WhiteBalance Shift Blue Fine

A command used to set the white-balance shift B component for the current white balance mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xF7	0x00	WB_SHIFT_B	—

1. DATA1 is the CMND2 query target (0xD3).
2. DATA2 sets WB_SEL.

■ WB_SHIFT_B arguments

DATA2	Description
0x77–0x89	0x77 (−9) – 0x80 (0) – 0x89 (+9)
Other	0x80

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.13 <Reserved>

5.11.14 <Reserved>

5.11.15 Query ImageQuality Setting Fine (Query ImageQuality Setting Response Fine)

A command that returns image quality parameters.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xFD	—	0x00	—

1. DATA1 is the CMND2 query target (see the table below).
2. DATA2 is fixed at 0x00.

■ Receive command (Extended Response 2)

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x**FF**	—	—	—

1. RESP1 sets 0xF0.
2. RESP2 sets 0xFF.
3. DATA1 and DATA2 are set to values corresponding to the requested content (see table below).

CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
0xE1			Invalid
0xE3			Invalid
0xE5			Invalid
0xE7			Invalid
0xE9			Invalid
0xEB	0x00	1-100	*Returns* brightness.
0xED	0x00	1-100	*Returns* contrast.
0xEF	0x00	1-100	*Returns* saturation.
0xF1	0x00	1-100	*Returns* sharpness.
0xF3			Invalid
0xF5	0x00	1-100	*Returns* the white balance shift RED component.
0xF7	0x00	1-100	*Returns* the white balance shift BLUE component.
0xF9			Invalid
0xFB			Invalid
Other	0x00	0x00	Invalid

5.12 Original Command 9 (In-House Custom Parameter No. 9: DayNight Setting Ex)

An extended command unique to this specification. The checksum (CKSM) calculation is omitted from this chapter, as we have adopted the method outlined for Pelco-D in Chapter 3. New commands have been added for fine control of day/night parameters. *The command group described in Chapter 5.12 are available from version 1.60 (2021.10) of the firmware for both the SX800 and SX801. The existing day/night commands described in Chapter 5.4 have been retained following firmware version 1.60 for backward compatibility, but the settings for the existing commands are stored separately from those for the commands in this group.*

(0) Command sent:

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(1) Response (General Response):

Set the CKSM to the 8-bit sum of ALARMS and the value returned for CKSM.

(2) Response (Extended Response):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(3) Response (Query Response):

Set the CKSM to the 8-bit sum of ADDR through DATA15 (*in-house custom parameter*).

(4) Response (Extended Response 2, an in-house custom parameter):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

Set DayNight Mode

A command used to set the extended day/night mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x01	0x00	DN_MODE	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets DN_MODE.

■ DN_MODE arguments

DATA2	Description
0x00	AUTO
0x01	AUTO&SCHEDULED
0x02	SCHEDULED
0x03	DAY
0x04	NIGHT
Other	AUTO

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.2 Set Day to Night Threshold

A command used to set the threshold brightness for switching from day to night mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x03	0x00	D2N_TH	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets D2N_TH.

■ D2N_TH arguments

DATA2	Description
0x00-0xFF	0 – 255

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.3 Set Night to Day Threshold

A command used to set the threshold brightness for switching from night to day mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x05	0x00	N2D_TH	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets N2D_TH.

■ N2D_TH arguments

DATA2	Description
0x00-0xFF	0 – 255

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.4 Set DayNight Auto Delay

A command used to set the delay (in seconds) for switching between day and night modes.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x07	0x00	AUTO_DELAY	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets AUTO_DELAY.

■ AUTO_DELAY arguments

DATA2	Description
0x00–0x3C	0 –60
Other	7

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.5 Set Day Start Time

A command used to set the start time (SCHEDULED and AUTO&SCHEDULED) for day mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x09	DAYTIME_HH	DAYTIME_MM	—

1. DATA1 sets DAYTIME_HH.
2. DATA2 sets DAYTIME_MM.

■ DAYTIME_HH arguments

DATA2	Description
0x00–0x17	00–23
Other	07:00

■ DAYTIME_MM arguments

DATA2	Description
0x00–0x3B	00–59
Other	07:00

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.6 Set Night Start Time

A command used to set the start time (SCHEDULED and AUTO&SCHEDULED) for night mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x0B	NIGHTTIME_HH	NIGHTTIME_MM	—

1. DATA1 sets NIGHTTIME_HH.
2. DATA2 sets NIGHTTIME_MM.

■ NIGHTTIME_HH arguments

DATA2	Description
0x00–0x17	00–23
Other	17:00

■ NIGHTTIME_MM arguments

DATA2	Description
0x00–0x3B	00–59
Other	17:00

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.7 Set Optical Filter Day

A command used to set the optical filter for day mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x0D	0x00	OPT_DAY	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets OPT_DAY.

■OPT_DAY arguments

DATA2	Description
0x00	IRC
0x01	VLC
Other	IRC

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.8 Set Optical Filter Night

A command used to set the optical filter for night mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x0F	0x00	OPT_NIGHT	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets OPT_NIGHT.

■ OPT_NIGHT arguments

DATA2	Description
0x00	CLEAR
0x01	VLC
Other	CLEAR

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.9 <Reserved>

5.12.10 Query DayNight Setting Ex (Query DayNight Setting Ex Response)

A command that returns extended day/night mode parameters.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	－	0xF1	0x1D	－	0x00	－

1．DATA1 is the CMND2 query target (see the table below).

2．DATA2 is fixed at 0x00.

■ Receive command (Extended Response 2)

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x1F	—	—	—

1. RESP1 sets 0xF1.
2. RESP2 sets 0x1F.
3. DATA1 and DATA2 are set to values corresponding to the requested content (see table below).

CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
0x01	0x00	0x00-0x04	*Returns* the extended day/night mode.
0x03	0x00	0x00-0xFF	The threshold brightness for switching from day to night mode.
0x05	0x00	0x00-0xFF	The threshold brightness for switching from night to day mode.
0x07	0x00	0x00-0x3C	The delay (in seconds) for switching between day and night modes.
0x09	0x00-0x17	0x00-0x3B	The start time (SCHEDULED and AUTO&SCHEDULED) for day mode.
0x0B	0x00-0x17	0x00-0x3B	The start time (SCHEDULED and AUTO&SCHEDULED) for night mode.
0x0D	0x00	0x00-0x01	*Returns* the optical filter for day mode.
0x0F	0x00	0x00-0x01	*Returns* the optical filter for night mode.
0x11			Invalid
0x13			Invalid
0x15			Invalid
0x17			Invalid
0x19			Invalid
0x1B			Invalid
Other	0x00	0x00	Invalid

5.13 Original Command 10 (In-House Custom Parameter No. 10: Zoom Focus Setting Ex)

An extended command unique to this specification. The checksum (CKSM) calculation is omitted from this chapter, as we have adopted the method outlined for Pelco-D in Chapter 3. New commands have been added for fine control of zoom and focus speed parameters. *The command group described in Chapter 5.13 are available from version 2.00 (2022.2) of the firmware for both the SX800 and SX801.*

(0) Command sent:

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(1) Response (General Response):

Set the CKSM to the 8-bit sum of ALARMS and the value returned for CKSM.

(2) Response (Extended Response):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(3) Response (Query Response):

Set the CKSM to the 8-bit sum of ADDR through DATA15 (*in-house custom parameter*).

(4) Response (Extended Response 2, an in-house custom parameter):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

5.13.1 Set Zoom Speed Ex

A command used to set the lens zoom speed.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x25	0x00	Z_SPEED	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets Z_SPEED.

■ Z_SPEED arguments (time in seconds to go from widest angle to maximum zoom)

DATA2	Description	Values for existing command (5.2.1, “Set Zoom Speed”) are now as follows
0x00	Invalid	
0x01	Maximum Speed	0x03
0x02	Lower speed than maximum speed	0x03
0x03	Lower speed than 0x02	0x02
0x04	Lower speed than 0x03	0x02
0x05	Lower speed than 0x04	0x01
0x06	Lower speed than 0x05	0x01
0x07	Lower speed than 0x06	0x00
0x08	Lower speed than 0x07	0x00
0x09	Lower speed than 0x08	0x00
0x0A	Minumum Speed	0x00
Other	Handled as 0x01	0x03

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.13.2 Set Focus Speed Ex

A command used to set the lens focus speed.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x27	0x00	F_SPEED	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets F_SPEED.

■ F_SPEED arguments (time in seconds to go from minimum to maximum focus distance)

DATA2	Description	Values for existing command (5.2.2, “Set Focus Speed”) are now as follows
0x00	Invalid	
0x01	Maximum Speed	0x03
0x02	Lower speed than maximum speed	0x03
0x03	Lower speed than 0x02	0x02
0x04	Lower speed than 0x03	0x02
0x05	Lower speed than 0x04	0x01
0x06	Lower speed than 0x05	0x01
0x07	Lower speed than 0x06	0x00
0x08	Lower speed than 0x07	0x00
0x09	Lower speed than 0x08	0x00
0x0A	Minumum Speed	0x00
Other	Handled as 0x01	0x03

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.13.3 Set Digital Zoom Ex

A command used to set the zoom ratio for digital zoom.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x21	0x00	DZ_MAG	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets DZ_MAG.

■ DZ_MAG arguments

DATA2	Description	Notes
0x00	1.25×	Digital zoom is enabled and disabled via the existing command (F0 37).
0x01	1.50×	Ditto
0x02	1.75×	Ditto
0x03	2.00×	Ditto
Other	Handled as 0x00	Ditto

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.13.4 Query Zoom Focus Speed Setting Ex (Query Zoom Focus Setting Ex Response)

A command that returns the 10-step parameters for zoom/focus.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	－	0xF1	0x2D	－	0x00	－

1．DATA1 queries the setting for CMND2 (see table below).

2．DATA2 is fixed at 0x00.

■ Receive command (Extended Response 2)

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x2F	—	—	—

- RESP1 sets 0xF1.
- RESP2 sets 0x2F.
- DATA1 and DATA2 are set to values corresponding to the requested content (see table below).

CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
0x21	0x00	0x00-0x03	Zoom ratio for digital zoom
0x23			Invalid
0x25	0x00	0x01-0x0A	Lens zoom speed
0x27	0x00	0x01-0x0A	Lens focus speed
0x29			Invalid
0x2B			Invalid
Other			Invalid

EOD

Appendix 1. Table of ZOOM Position vs Focal length for SX800/801 FW Ver.2.10 Digital ZOOM (Continuous)

Tele (SX800/801 : 1W)

Lens		Field of View			Zoom (SX800/801) Set Zoom Position (0x00,0xFF) / Query Zoom Position (0x00,0x82)		OMVF (SX800/801) Zoom control *		Zoom (SX800/801) Set Zoom Position (0x00,0xFF) / Query Zoom Position (0x00,0x82)		OMVF (SX800/801) Zoom control *	
					OSI (SX800) : SetAbsoluteZoomPosition / GetAbsoluteZoomPosition		OSI (SX2000) : SetZoomControl / GetZoomControl		OSI (SX800) : SetAbsoluteZoomPosition / GetAbsoluteZoomPosition		OSI (SX2000) : SetZoomControl / GetZoomControl	
Motor Pulse	Focal Length	Vertical	Horizontal	Diagonal	[DEC]	[HEX]	[DEC]	[DEC]	[DEC]	[HEX]	[DEC]	[DEC]
Steps	[mm]		[degree]									
1	20.0	11.847	20.974	24.017	0	0	0	0.000	0	0	0	0.000
2	20.4	11.672	20.662	23.658	355	163	355	0.017	354	162	354	0.017
3	20.8	11.498	20.349	23.300	677	2A5	677	0.033	678	2A6	678	0.033
4	21.2	11.324	20.037	22.941	1000	3E8	1000	0.049	1000	3E8	1000	0.049
5	21.6	11.149	19.724	22.582	1323	52B	1323	0.065	1322	52A	1322	0.065
6	22.0	10.972	19.418	22.231	1646	66E	1646	0.080	1644	668	1644	0.080
7	22.4	10.795	19.110	21.878	1969	7B1	1969	0.096	1966	7AE	1966	0.096
8	22.8	10.564	18.703	21.462	2293	8F5	2293	0.112	2288	8F0	2288	0.112
9	23.2	10.386	18.388	21.099	2616	A38	2616	0.128	2610	A32	2610	0.128
10	23.7	10.245	18.138	20.809	2939	B7B	2939	0.144	2932	B74	2932	0.144
11	24.2	10.038	17.755	20.323	3261	CC5	3261	0.159	3254	CBE	3254	0.159
12	24.7	9.831	17.389	19.905	3584	E00	3584	0.175	3576	DF8	3576	0.175
13	25.2	9.624	17.024	19.488	3907	F43	3907	0.191	3898	F32	3898	0.191
14	25.8	9.469	16.749	19.168	4352	1100	4352	0.213	4342	10F6	4342	0.213
15	26.4	9.274	16.401	18.769	4798	12BE	4798	0.234	4787	12B3	4787	0.234
16	26.9	9.083	16.061	18.380	5121	1401	5121	0.250	5110	13F6	5110	0.250
17	27.5	8.892	15.724	17.992	5444	1544	5444	0.266	5432	1538	5432	0.266
18	28.1	8.713	15.409	17.632	5767	1687	5767	0.282	5754	167A	5754	0.281
19	28.7	8.536	15.097	17.274	6090	17CA	6090	0.297	6076	17BC	6076	0.297
20	29.3	8.360	14.786	16.920	6412	190C	6412	0.313	6398	18FE	6398	0.313
21	29.9	8.179	14.447	16.530	6735	1A4F	6735	0.329	6720	1A40	6720	0.329
22	30.5	8.000	14.130	16.166	7058	1B92	7058	0.345	7042	1B82	7042	0.344
23	31.1	7.821	13.814	15.802	7381	1CD5	7381	0.360	7364	1CC4	7364	0.360
24	32.0	7.671	13.556	15.509	7715	1E13	6170	0.118	6170	1814	6170	0.094
25	32.9	7.512	13.275	15.187	8049	1F71	6435	0.123	6435	1927	6435	0.098
26	33.7	7.363	13.010	14.883	8402	20D2	6722	0.128	6722	1A42	6722	0.103
27	34.6	7.213	12.746	14.580	8755	2235	7004	0.134	7004	1B6C	7004	0.107
28	35.5	7.057	12.524	14.332	9108	2394	7286	0.139	7286	1C96	7286	0.112
29	36.3	6.941	12.264	14.030	9393	24B1	7515	0.143	7515	1D6B	7515	0.115
30	37.2	6.826	12.055	13.791	9678	25EE	7744	0.148	7744	1E40	7744	0.118
31	38.0	6.711	11.852	13.559	9963	2729	7973	0.152	7973	1F15	7973	0.122
32	38.9	6.589	11.637	13.279	10419	2892	8333	0.159	8333	208F	8333	0.127
33	39.8	6.452	11.402	13.044	10754	2A12	8602	0.164	8604	218C	8604	0.131
34	40.7	6.343	11.202	12.862	11074	2B42	8859	0.169	8859	2293	8859	0.135
35	41.6	6.234	11.009	12.640	11394	2C72	9115	0.174	9115	2397	9115	0.139
36	42.5	6.134	10.841	12.453	11714	2DA2	9371	0.179	9371	249B	9371	0.143
37	43.5	6.035	10.662	12.264	12059	2F1B	9648	0.185	9672	25CF	9672	0.148
38	44.5	5.935	10.473	12.053	12404	3094	9924	0.190	9944	26D8	9944	0.152
39	45.5	5.835	10.307	11.793	12754	3152	10205	0.195	10225	27D8	10225	0.156
40	46.5	5.735	10.139	11.582	13104	3310	10485	0.200	10505	2918	10505	0.161
41	47.5	5.635	9.939	11.372	13454	348E	10766	0.206	10786	2A22	10786	0.165
42	48.6	5.521	9.780	11.168	13779	3503	11023	0.211	11023	2B0F	11023	0.169
43	49.7	5.411	9.595	10.945	14104	3717	11282	0.216	11282	2C12	11282	0.173
44	50.7	5.310	9.398	10.752	14426	3851	11539	0.220	11548	2D1C	11548	0.176
45	51.8	5.208	9.235	10.556	14749	3A05	11796	0.225	11814	2E26	11814	0.180
46	52.9	5.108	9.035	10.358	15073	3BD9	12054	0.231	12080	2F2A	12080	0.184
47	47.8	5.012	8.860	10.138	15460	3C64	12364	0.236	12368	3050	12368	0.189
48	48.9	4.912	8.693	9.941	15783	3DA7	12623	0.241	12626	3152	12626	0.193
49	49.9	4.812	8.516	9.737	16106	3EEA	12882	0.246	12884	3254	12884	0.197
50	50.9	4.716	8.378	9.557	16431	4023	13141	0.251	13142	3356	13142	0.201
51	51.9	4.648	8.213	9.399	16804	4184	13443	0.256	13443	3483	13443	0.206
52	52.9	4.552	8.056	9.219	17140	42F4	13712	0.262	13712	3590	13712	0.210
53	53.9	4.456	7.899	9.039	17476	4464	13981	0.267	13982	3696	13982	0.214
54	54.9	4.360	7.742	8.860	17812	45D4	14250	0.272	14252	37DC	14252	0.218
55	55.9	4.312	7.624	8.725	18117	46D5	14517	0.277	14519	38E7	14519	0.221
56	56.9	4.216	7.478	8.558	18454	4836	14902	0.282	14787	39C3	14787	0.226
57	57.7	4.151	7.339	8.398	18820	4984	15236	0.287	15056	3AD0	15056	0.230
58	58.5	4.087	7.226	8.267	19186	4AD2	15570	0.292	15325	3BCD	15325	0.234
59	59.3	4.023	7.115	8.097	19552	4C20	15904	0.297	15594	3CCA	15594	0.238
60	61.9	3.930	6.950	7.954	19812	4D64	16132	0.302	15849	3DE9	15849	0.242
61	64.5	3.906	6.918	7.905	20165	4EC5	16453	0.308	16130	3F04	16130	0.247
62	63.4	3.784	6.691	7.658	20551	5019	16793	0.313	16451	4011	16451	0.252
63	64.4	3.688	6.521	7.464	20887	5197	17047	0.318	16705	4101	16705	0.256
64	65.5	3.647	6.450	7.384	21108	5274	17204	0.321	16854	4176	16854	0.258
65	67.1	3.577	6.326	7.241	21492	53F4	17396	0.326	17146	4326	17146	0.262
66	68.7	3.510	6.208	7.106	21876	5574	17780	0.331	17438	4484	17438	0.267
67	69.2	3.445	6.093	6.974	22191	56A5	17989	0.336	17715	4593	17715	0.271
68	70.7	3.381	5.980	6.844	22575	5827	18215	0.339	18007	4717	18007	0.275
69	72.4	3.318	5.869	6.717	22958	59A6	18342	0.344	18299	4873	18299	0.280
70	73.8	3.256	5.759	6.592	23173	5A85	18565	0.350	18592	4990	18592	0.284
71	75.4	3.196	5.653	6.471	23557	5C07	18791	0.354	18884	4B04	18884	0.289
72	77.0	3.136	5.550	6.352	23941	5D89	19017	0.359	19176	4C28	19176	0.293
73	78.1	3.080	5.447	6.235	24199	5E8B	19083	0.360	19468	4D4C	19468	0.297
74	79.7	3.025	5.348	6.119	24517	5FC5	19141	0.361	19760	4E70	19760	0.302
75	81.1	2.988	5.249	6.008	24853	6115	19349	0.365	19952	4DA0	19952	0.305
76	82.7	2.934	5.188	5.897	25237	6295	19605	0.370	20244	4F14	20244	0.309
77	84.3	2.898	5.093	5.787	25621	6417	19863	0.375	20536	5018	20536	0.314
78	85.9	2.804	4.985	5.677	25878	6516	20052	0.378	20732	50DC	20732	0.317
79	87.5	2.755	4.870	5.574	26262	6696	20310	0.383	21024	5204	21024	0.321
80	89.2	2.701	4.778	5.469	26533	67A5	20517	0.387	21220	52E4	21220	0.324
81	90.8	2.653	4.693	5.372	26917	6927	20775	0.392	21512	53E8	21512	0.329
82	92.5	2.603	4.605	5.277	27302	6AA6	21030	0.396	21804	54FC	21804	0.333
83	94.4	2.554	4.518	5.171	27558	6B46	21190	0.401	22047	5617	22047	0.336
84	96.1	2.507	4.434	5.076	27942	6D06	21446	0.405	22339	5743	22339	0.341
85	98.0	2.461	4.353	4.983	28214	6E36	21558	0.409	22571	5833	22571	0.344
86	99.8	2.416	4.273	4.892	28598	6FB6	21814	0.414	22863	5957	22863	0.349
87	101.7	2.370	4.192	4.800	28982	7136	22070	0.418	23155	5A83	23155	0.353
88	103.7	2.327	4.116	4.712	29350	7292	22322	0.423	23391	5B7F	23391	0.357
89	105.6	2.283	4.038	4.624	29606	7386	22502	0.426	23683	5CA3	23683	0.361
90	107.6	2.241	3.964	4.538	29990	7506	22758	0.431	23975	5DC7	23975	0.366
91	109.6	2.199	3.890	4.453	30247	7607	22938	0.435	24196	5E9C	24196	0.369
92	111.7	2.159	3.819	4.371	30631	7767	23194	0.439	24488	5FA8	24488	0.373
93	114.0	2.119	3.749	4.291	30919	78C7	23495	0.445	24736	60A0	24736	0.377
94	116.2	2.080	3.680	4.213	31303	7A47	23751	0.450	25028	61C4	25028	0.381
95	118.4	2.042	3.613	4.134	31559	7B47	23943	0.453	25320	62E8	25320	0.386
96	120.7	2.003	3.543	4.058	31927	7C97	24199	0.458	25542	63C6	25542	0.389
97	123.1	1.966	3.477	3.982	32183	7D97	24471	0.463	25834	64EA	25834	0.393
98	124.5	1.930	3.414	3.908	32599	7F57	24727	0.467	26080	65E0	26080	0.397
99	126.9	1.895	3.352	3.836	32855	8057	24919	0.471	26372	6704	26372	0.401
100	129.3	1.858	3.288	3.767	33255	81E7	25175	0.476	26664	6828	26664	0.406
101	132.0	1.824	3.227	3.694	33568	8348	25391	0.513	26998	6946	27018	0.410
102	135.1	1.788	3.164	3.626	33824	8448	25608	0.518	27290	6A7A	27310	0.414
103	137.7	1.757	3.109	3.559	34280	8558	25752	0.523	27424	6B20	27444	0.418
104	140.4	1.724	3.050	3.494	34536	8658	25944	0.527	27716	6C44	27736	0.422
105	143.1	1.692	2.993	3.427	34920	87E8	26200	0.532	28008	6D68	28028	0.426
106	145.9	1.651	2.939	3.364	35186	8908	26392	0.536	28242	6E52	28262	0.429
107	148.7	1.630	2.884	3.302	35624	8B08	26712	0.542	28534	6F76	28554	0.434
108	151.5	1.601	2.833	3.245	35880	8C08	26904	0.546	28768	7060	28788	0.437
109	154.4	1.571	2.779	3.182	36264	8D88	27160	0.551	29060	7184	29080	0.441
110	157.3	1.541	2.727	3.122	36616	8F08	27416	0.556	29352	72A8	29372	0.445
111	160.3	1.513	2.677	3.064	36968	9068	27672	0.564	29575	7387	29575	0.451
112	163.3	1.485	2.627	3.008	37224	9168	27864	0.568	29867	74AB	29867	0.455
113	166.4	1.457	2.578	2.952	37512	9288	28056	0.572	30159	75CF	30159	0.459
114	169.7	1.430	2.530	2.898	37960	9448	28312	0.579	30368	7640	30368	0.463
115	172.9	1.404	2.484	2.843	38344	95C8	28568	0.584	30660	7764	30660	0.467
116	176.2	1.378	2.438	2.790	38664	9728	28824	0.589	30952	7888	30952	0.472
117	179.6	1.353	2.392	2.739	38920	9828	28952	0.592	31186	7972	31186	0.475
118	183.0	1.327	2.348	2.687	39304	9988	29208	0.597	31478	7A96	31478	0.480
119	186.4	1.303	2.305	2.639	39640	9AF8	29464	0.602	31770	7BBA	31770	0.484
120	189.9	1.278	2.260	2.589	39960	9C38	29656	0.606	32004	7CA4	32004	0.488
121	193.5	1.255	2.220	2.541	40329	9D89	29912	0.611	32296	7DC8	32296	0.492
122	197.1	1.232	2.179	2.495	40585	9E89	30104	0.615	32588	7EEC	32588	0.497
123	201.1	1.208	2.136	2.446	40969	A009	30360	0.620	32822	7FD6	32842	0.501
124	205.0	1.186	2.098	2.402	41161	A189	30552	0.624	33114	80FA	33134	0.505
125	208.9	1.165	2.060	2.358	41545	A309	30808	0.629	33406	8224	33426	0.509
126	212.8	1.143	2.022	2.314	42025	A4C9	31128	0.636	33698	8348	33718	0.514
127	216.9	1.123	1.986	2.274	42313	A5C9	31320	0.640	33932	8432	33952	0.518
128	221.0	1.103	1.950	2.234	42569	A6C9	31512	0.644	34224	8556	34244	0.522
129	225.3	1.080	1.912	2.188	43081	A7F9	31896	0.652	34402	8662	34422	0.525
130	229.6	1.060	1.875	2.147	43337	A8F9	32088	0.656	34694	8786	34714	0.529
131	234.0	1.040	1.839	2.106	43657	AA49	32344	0.661	34986	88AA	35006	0.533
132	238.5	1.021	1.807	2.068	43913	ABA9	32536	0.665	35278	89CE	35298	0.538
133	243.1	1.002	1.773	2.030	44297	AD09	32792	0.670	35512	8AB8	35532	0.542
134	247.7	0.984	1.740	1.992	44681	AE89	33048	0.675	35804	8BDC	35824	0.546
135	252.4	0.966	1.708	1.955	45065	B009	33304	0.680	36096	8D00	36116	0.551
136	257.1	0.948	1.676	1.919	45321	B109	33496	0.684	36388	8E24	36408	0.555
137	262.1	0.930	1.646	1.884	45705	B289	33752	0.689	36622	8F0E	36642	0.559
138	267.1	0.913	1.615	1.849	46089	B409	34008	0.694	36914	9032	36934	0.563
139	272.2	0.896	1.585	1.815	46537	B5C9	34328	0.701	37148	9116	37168	0.567
140	277.4	0.879	1.555	1.781	46793	B6C9	34520	0.705	37440	923A	37460	0.571
141	282.7	0.863	1.527	1.748	47081	B7B9	34713	0.718	37641	9419	37661	0.574
142	288.1	0.847	1.498	1.716	47337	B8B9	34905	0.722	37933	953D	37953	0.578
143	293.6	0.831	1.471	1.684	47723	BA49	35193	0.728	38178	9522	38178	0.583
144	299.2	0.815	1.443	1.654	47979	BB49	35385	0.732	38470	9646	38470	0.587
145	304.8	0.800	1.417	1.622	48235	BC49	35577	0.736	38762	976A	38762	0.591
146	310.7	0.786	1.391	1.592	48731	BE9B	35945	0.744	38995	9849	38995	0.595
147	316.6	0.772	1.365	1.563	49067	BF4B	36201	0.749	39287	996D	39287	0.599
148	322.6	0.757	1.339	1.533	49403	C08B	36457	0.754	39579	9A91	39579	0.603
149	328.7	0.743	1.313	1.503	49659	C18B	36649	0.758	39871	9BB5	39871	0.607
150	334.9	0.729	1.288	1.474	50059	C38B	36937	0.764	40047	9C6F	40047	0.611
151	341.5	0.716	1.266	1.450	50412	C4EC	37228	0.769	40329	9D89	40329	0.615
152	348.1	0.703	1.243	1.424	50668	C5EC	37420	0.774	40621	9EAD	40621	0.619
153	354.8	0.690	1.220	1.398	51084	C78C	37740	0.780	40913	9FD1	40913	0.623
154	361.4	0.677	1.197	1.371	51403	C8CB	37964	0.784	41122	A042	41122	0.627
155	368.4	0.664	1.176	1.347	51739	CA1B	38220	0.789	41351	A19F	41351	0.630
156	375.4	0.652	1.153	1.322	52092	CB7C	38492	0.795	41674	A2CA	41674	0.635
157	382.4	0.639	1.131	1.296	52348	CC7C	38684	0.799	41906	A3B2	41906	0.639
158	389.6	0.626	1.111	1.272	52764	CE1C	39004	0.805	42229	A4F5	42229	0.644
159	397.4	0.616	1.090	1.248	53083	CF9B	39323	0.810	42467	A5E3	42467	0.648
160	405.2	0.605	1.070	1.225	53419	D09B	39579	0.815	42795	A6F3	42795	0.653
161	412.7	0.594	1.050	1.202	53772	D29C	39868	0.821	43018	A8BA	43018	0.656
162	420.3	0.584	1.032	1.181	54028	D39C	40060	0.825	43346	A9F2	43346	0.661
163	428.0	0.572	1.012	1.158	54444	D51C	40348	0.831	43594	AB0A	43594	0.665
164	436.8	0.561	0.993	1.137	54764	D6EC	40684	0.836	43911	AB23	43911	0.669
165	445.7	0.551	0.975	1.116	55100	D7EC	40940	0.841	44180	AC30	44180	0.673
166	453.6	0.541	0.957	1.095	55403	D8B0	41168	0.845	44362	AD4A	44362	0.677
167	461.6	0.531	0.939	1.075	55723	D9B0	41392	0.849	44654	AE6E	44654	0.681
168	471.1	0.520	0.921	1.055	56075	DAF0	41648	0.854	44946	AF92	44946	0.685
169	480.1	0.511	0.904	1.035	56444	DC7C	41916	0.861	45183	B063	45183	0.689
170	489.1	0.501	0.887	1.016	56780	DDCC	42188	0.866	45475	B187	45475	0.693
171	498.3	0.492	0.870	0.997	57133	DF2D	42461	0.872	45768	B2AB	45768	0.697
172	508.1	0.483	0.855	0.979	57469	E07D	42717	0.877	45975	B307	45975	0.702
173	517.8	0.474	0.839	0.961	57805	E1CD	42973	0.882	46267	B42B	46267	0.706
174	527.7	0.466	0.824	0.943	58125	E32D	43229	0.887	46500	B5A1	46500	0.710
175	537.7	0.457	0.809	0.926	58461	E47D	43485	0.892	46792	B6C5	46792	0.714
176	548.0	0.448	0.793	0.908	58813	E5BD	43741	0.897	47026	B7AE	47026	0.718
177	558.5	0.440	0.779	0.892	59150	E70E	44030	0.903	47320	B8D8	47320	0.722
178	569.2	0.432	0.764	0.875	59486	E85E	44286	0.908	47554	B9E1	47554	0.726
179	580.0	0.424	0.750	0.858	59805	E99D	44542	0.913	47844	BAF4	47844	0.730
180	591.1	0.416	0.736	0.842	60141	EAED	44798	0.918	48078	BC0E	48078	0.734
181	602.4	0.408	0.722	0.827	60564	EC94	45140	0.925	48399	BD4F	48399	0.739
182	613.9	0.401	0.709	0.812	60930	EE82	45442	0.928	48664	BE18	48664	0.743
183	625.5	0.393	0.696	0.797	61266	EFD2	45698	0.933	48957	BF3D	48957	0.747
184	637.6	0.386	0.683	0.782	61665	F12D	45956	0.938	49248	C004	49248	0.751
185	649.8	0.379	0.670	0.768	62001	F27D	46212	0.943	49542	C126	49542	0.756
186	662.2	0.372	0.658	0.753	62274	F382	46418	0.946	49748	C1F4	49748	0.759
187	674.7	0.365	0.646	0.739	62610	F4D2	46674	0.954	50008	C308	50008	0.763
188	687.5	0.358	0.634	0.726	62946	F622	46930	0.959	50301	C42D	50301	0.767
189	700.5	0.351	0.622	0.712	63282	F772	47186	0.964	50593	C551	50593	0.771
190	714.1	0.345	0.610	0.699	63552	F882	47394	0.969	50851	C671	50851	0.775
191	727.8	0.339	0.599	0.686	63955	FA13	47699	0.974	51094	C782	51094	0.779
192	741.8	0.333	0.588	0.673	64197	FAEF	47855	0.978	51335	C89F	51335	0.784
193	756.0	0.327	0.577	0.660	64533	FC35	48117	0.983	51627	C9CB	51627	0.788
194	770.4	0.320	0.566	0.647	64949	FDB5	48437	0.989	51919	CAF7	51919	0.792
195	785.3	0.314	0.556	0.634	65182	FE9E	48629	0.993	52148	CB92	52148	0.796
196	800.5	0.308	0.546	0.622	65535	FFFF	48885	1.000	52628	CD7C	52440	0.800
197	808.3	0.305	0.540	0.618					52933	CEC5		
198	816.2	0.302	0.535	0.614					53237	CFED		
199	824.1	0.299	0.529	0.610					53541	D115		
200	832.0	0.297	0.525	0.601					54446	D40E		
201	840.0	0.294	0.519	0.597					54648	D4D8		
202	848.0	0.291	0.515	0.592					54953	D669		
203	856.1	0.288	0.510	0.588					55257	D7C1		
204	864.3	0.286	0.506	0.579					55561	DC9D		
205	872.5	0.283	0.501	0.574					56066	DE88		
206	880.7	0.280	0.497	0.569					56370	DFF2		
207	889.1	0.278	0.492	0.565					56674	E162		
208	896.5	0.276	0.488	0.559					56978	E2D2		
209	904.6	0.273	0.484	0.554					57282	E442		
210	912.8	0.271	0.479	0.549					57586	E5B2		
211	921.1	0.268	0.475	0.544					57890	E722		
212	929.5	0.266	0.471	0.540					58194	E892		
213	938.0	0.264	0.467	0.535					58498	E9FC		
214	946.4	0.261	0.463	0.530					58802	EB6C		
215	954.9	0.259	0.459	0.526					59207	F237		
216	963.5	0.257	0.455	0.521					59511	F3A7		
217	972.1	0.254	0.452	0.516					59815	F517		
218	978.0	0.253	0.448	0.513					60319	F817		
219	984.5	0.251	0.445	0.509					60523	F917		
220	992.0	0.249	0.441	0.505					60527	F91F		
221	1,000.0	0.247	0.438	0.501					60531	F923		
222	1,008.0	0.247	0.438	0.501					60535	F917		

* Note From FW version 1.5, the OMVF control value has been changed from 0 to +1 and the control resolution is also changed.

Tele2 (SX800/801 : 1.5)

| Lens | | Field of View | | | Zoom (SX800/801) Set

Appendix 2. Table of ZOOM Position vs Focal length for SX800 FW Ver.2.10 Digital ZOOM (Extended)

Digital ZOOM : OFF

Pelco (BX800) :
Set Zoom Position (0x00,0x4F)
Query Zoom Position (0x00,0x83)

CGI (BX800) :
SetAbsoluteZoomPosition
GetAbsoluteZoomPosition

CGI (BX800) :
SetZoomControl
GetZoomControl

ON/VF (BX800)
Zoom control

Lens		Field of View											
Motor Pulse	Focal Length	Vertical	Horizontal	Diagonal									
Steps	[mm]		[degree]			[DEC]	[HEX]		[DEC]			[DEC]	
1	20.0	11.847	20.874	24.017		0	0		1			0.000	
2	20.4	11.672	20.662	23.658		336	150					0.005	
3	20.8	11.496	20.449	23.300		672	2A0					0.010	
4	21.2	11.321	20.038	22.942		991	3DF					0.015	
5	21.6	11.146	19.727	22.586		1328	530					0.020	
6	22.0	10.972	19.418	22.231		1680	690		2			0.026	
7	22.4	10.799	19.110	21.878		2016	7E0					0.031	
8	22.9	10.584	18.729	21.440		2353	931					0.036	
9	23.3	10.414	18.426	21.093		2672	A70					0.041	
10	23.7	10.245	18.126	20.749		3008	BC0					0.046	
11	24.2	10.038	17.755	20.323		3361	D21		3			0.051	
12	24.7	9.831	17.390	19.904		3697	E71					0.056	
13	25.1	9.669	17.102	19.574		4033	FC1					0.062	
14	25.6	9.469	16.748	19.168		4352	1100					0.066	
15	26.1	9.274	16.401	18.769		4688	1250					0.072	
16	26.6	9.083	16.061	18.380		5041	1391		4			0.077	
17	27.1	8.897	15.730	18.001		5377	1501					0.082	
18	27.6	8.715	15.409	17.632		5713	1651					0.087	
19	28.1	8.539	15.097	17.274		6033	1791					0.092	
20	28.7	8.336	14.736	16.860		6369	18E1					0.097	
21	29.2	8.174	14.447	16.530		6722	1A42		5			0.103	
22	29.8	7.987	14.116	16.151		7058	1B92					0.108	
23	30.3	7.839	13.854	15.850		7394	1CE2					0.113	
24	30.9	7.671	13.556	15.509		7713	1E21					0.118	
25	31.5	7.512	13.275	15.187		8049	1F71					0.123	
26	32.1	7.363	13.010	14.883		8402	20D2		6			0.128	
27	32.7	7.221	12.757	14.597		8738	2222					0.133	
28	33.3	7.087	12.524	14.326		9074	2372					0.138	
29	34.0	6.941	12.264	14.030		9393	2491					0.143	
30	34.6	6.822	12.055	13.790		9729	2601					0.148	
31	35.3	6.692	11.834	13.537		10082	2762		7			0.154	
32	36.0	6.569	11.607	13.279		10418	28B2					0.159	
33	36.7	6.452	11.402	13.044		10754	2A02					0.164	
34	37.4	6.341	11.207	12.821		11074	2B42					0.169	
35	38.1	6.236	11.020	12.608		11410	2C92					0.174	
36	38.8	6.134	10.841	12.403		11763	2DF3		8			0.179	
37	39.5	6.035	10.667	12.204		12099	2F43					0.185	
38	40.3	5.925	10.473	11.983		12435	3093					0.190	
39	41.0	5.831	10.307	11.793		12754	31D2					0.195	
40	41.8	5.728	10.127	11.580		13090	3322					0.200	
41	42.6	5.622	9.939	11.372		13443	3483		9			0.205	
42	43.4	5.521	9.760	11.168		13779	3603					0.210	
43	44.3	5.411	9.565	10.945		14115	3723					0.215	
44	45.1	5.315	9.396	10.752		14435	3863					0.220	
45	46.0	5.211	9.212	10.540		14771	39B3					0.225	
46	46.9	5.109	9.033	10.336		15123	3B13		10			0.231	
47	47.8	5.012	8.860	10.138		15460	3C54					0.236	
48	48.7	4.917	8.693	9.947		15796	3DB4					0.241	
49	49.6	4.824	8.532	9.763		16115	3EF3					0.246	
50	50.5	4.739	8.378	9.587		16451	4043					0.251	
51	51.5	4.646	8.213	9.399		16804	41A4		11			0.256	
52	52.5	4.557	8.056	9.219		17140	42F4					0.262	
53	53.5	4.472	7.906	9.047		17476	4444					0.267	
54	54.5	4.390	7.762	8.882		17795	4583					0.272	
55	55.6	4.312	7.624	8.725		18131	46D3					0.277	
56	56.6	4.230	7.479	8.558		18484	4834		12			0.282	
57	57.7	4.151	7.339	8.398		18820	4984					0.287	
58	58.8	4.075	7.205	8.245		19156	4AD4					0.292	
59	59.9	4.001	7.075	8.097		19476	4C14					0.297	
60	61.0	3.930	6.950	7.954		19812	4D64					0.302	
61	62.2	3.856	6.818	7.803		20165	4EC5		13			0.308	
62	63.3	3.784	6.691	7.658		20501	5015					0.313	
63	64.6	3.714	6.568	7.517		20837	5165					0.318	
64	65.8	3.647	6.450	7.382		21196	52A4					0.323	
65	67.1	3.577	6.326	7.241		21492	53F4					0.328	
66	68.3	3.510	6.208	7.105		21845	5555		14			0.333	
67	69.7	3.445	6.093	6.974		22181	56A5					0.338	
68	71.1	3.383	5.983	6.848		22517	5795					0.343	
69	72.4	3.318	5.869	6.717		22836	5934					0.348	
70	73.8	3.256	5.759	6.592		23173	5A85					0.353	
71	75.2	3.197	5.654	6.471		23525	5BE5		15			0.359	
72	76.6	3.139	5.552	6.355		23861	5D35					0.364	
73	78.1	3.080	5.447	6.235		24198	5E86					0.369	
74	79.6	3.023	5.346	6.119		24517	5FC5					0.374	
75	81.1	2.968	5.249	6.008		24853	6115					0.379	
76	82.7	2.911	5.149	5.893		25206	6276		16			0.385	
77	84.3	2.856	5.053	5.783		25542	63C6					0.390	
78	85.9	2.804	4.960	5.677		25878	6516					0.395	
79	87.5	2.753	4.870	5.574		26197	6655					0.400	
80	89.2	2.701	4.778	5.469		26533	67A5					0.405	
81	90.9	2.651	4.690	5.368		26886	6906		17			0.410	
82	92.6	2.603	4.605	5.271		27222	6A56					0.415	
83	94.3	2.554	4.518	5.171		27558	6BA6					0.421	
84	96.1	2.507	4.434	5.075		27878	6CE6					0.425	
85	97.8	2.461	4.353	4.983		28214	6E36					0.431	
86	99.9	2.415	4.271	4.889		28567	6F97		18			0.436	
87	101.8	2.370	4.192	4.799		28903	70E7					0.441	
88	103.7	2.327	4.116	4.712		29239	7237					0.446	
89	105.7	2.283	4.040	4.627		29558	7376					0.451	
90	107.7	2.241	3.965	4.539		29894	74C6					0.456	
91	109.8	2.199	3.890	4.457		30247	7627		19			0.462	
92	111.9	2.158	3.818	4.371		30583	7777					0.467	
93	114.0	2.119	3.749	4.291		30919	78C7					0.472	
94	116.2	2.079	3.679	4.211		31238	7A06					0.477	
95	118.4	2.041	3.611	4.134		31574	7B56					0.482	
96	120.7	2.003	3.544	4.056		31927	7CB7		20			0.487	
97	123.0	1.966	3.477	3.981		32263	7E07					0.492	
98	125.4	1.930	3.414	3.908		32599	7F57					0.497	
99	127.7	1.894	3.350	3.835		32919	8097					0.502	
100	130.1	1.859	3.289	3.765		33255	81E7					0.507	
101	132.6	1.824	3.227	3.694		33608	8348		21			0.513	
102	135.1	1.791	3.168	3.627		33944	8498					0.518	
103	137.7	1.757	3.109	3.559		34280	85E8					0.523	
104	140.4	1.724	3.050	3.492		34599	8727					0.528	
105	143.1	1.692	2.993	3.427		34935	8877					0.533	
106	145.8	1.661	2.939	3.364		35288	89D8		22			0.538	
107	148.6	1.630	2.884	3.302		35624	8B28					0.544	
108	151.4	1.601	2.832	3.242		35960	8C78					0.549	
109	154.3	1.571	2.780	3.183		36296	8DC8					0.554	
110	157.3	1.541	2.727	3.122		36616	8F08					0.559	
111	160.3	1.513	2.677	3.064		36968	9068		23			0.564	
112	163.4	1.485	2.626	3.007		37305	91B9					0.569	
113	166.6	1.457	2.578	2.951		37641	9309					0.574	
114	169.7	1.430	2.530	2.898		37960	9448					0.579	
115	173.0	1.404	2.483	2.843		38296	9598					0.584	
116	176.2	1.378	2.438	2.790		38649	96F9		24			0.590	
117	179.6	1.353	2.393	2.739		38985	9849					0.595	
118	183.0	1.327	2.348	2.687		39321	9999					0.600	
119	186.4	1.303	2.305	2.639		39640	9AD8					0.605	
120	190.0	1.278	2.262	2.589		39976	9C28					0.610	
121	193.6	1.255	2.220	2.541		40329	9D89		25			0.615	
122	197.3	1.231	2.178	2.494		40665	9ED9					0.620	
123	201.1	1.209	2.138	2.448		41001	A029					0.626	
124	205.0	1.186	2.098	2.402		41321	A169					0.631	
125	208.9	1.164	2.060	2.358		41657	A2B9					0.636	
126	212.9	1.143	2.022	2.314		42010	A41A		26			0.641	
127	217.0	1.121	1.984	2.271		42346	A56A					0.646	
128	221.1	1.101	1.947	2.232		42680	A6B8					0.651	
129	225.3	1.080	1.912	2.188		43001	A7F9					0.656	
130	229.6	1.060	1.875	2.148		43337	A949					0.661	
131	234.0	1.041	1.841	2.108		43690	AAAA		27			0.667	
132	238.4	1.021	1.807	2.068		44026	ACFA					0.672	
133	243.0	1.002	1.774	2.030		44362	AD4A					0.677	
134	247.7	0.984	1.740	1.992		44681	AE89					0.682	
135	252.4	0.966	1.708	1.956		45018	AFDA					0.687	
136	257.2	0.948	1.677	1.920		45370	B13A		28			0.692	
137	262.1	0.930	1.646	1.884		45706	B28A					0.698	
138	267.1	0.913	1.615	1.849		46043	B3DB					0.703	
139	272.2	0.896	1.586	1.815		46362	B51A					0.707	
140	277.4	0.879	1.556	1.781		46698	B66A					0.713	
141	282.7	0.863	1.527	1.748		47051	B7CB		29			0.718	
142	288.1	0.847	1.499	1.716		47387	B91B					0.723	
143	293.6	0.831	1.471	1.684		47723	BA6B					0.728	
144	299.2	0.816	1.444	1.653		48042	BBAA					0.733	
145	304.9	0.801	1.417	1.623		48378	BCFA					0.738	
146	310.7	0.786	1.391	1.592		48731	BE5B		30			0.744	
147	316.6	0.772	1.365	1.563		49067	BFAB					0.749	
148	322.7	0.757	1.339	1.535		49403	C0FB					0.754	
149	328.8	0.743	1.315	1.505		49723	C23B					0.759	
150	335.1	0.729	1.290	1.477		50059	C38B					0.764	
151	341.5	0.716	1.266	1.450		50412	C4EC		31			0.769	
152	348.0	0.703	1.243	1.424		50748	C63C					0.774	
153	354.7	0.689	1.220	1.398		51084	C78C					0.779	
154	361.4	0.677	1.198	1.373		51403	C8CB					0.784	
155	368.4	0.664	1.175	1.345		51739	CA1B					0.789	
156	375.6	0.652	1.153	1.320		52092	CB7C		32			0.795	
157	382.8	0.640	1.132	1.296		52428	CCCC					0.800	
158	390.2	0.628	1.112	1.273		52764	CE1C					0.805	
159	397.4	0.616	1.090	1.248		53083	CF5B					0.810	
160	405.0	0.605	1.070	1.225		53419	D0AB					0.815	
161	412.7	0.594	1.050	1.202		53772	D2CC		33			0.821	
162	420.6	0.583	1.031	1.180		54108	D3DC					0.826	
163	428.6	0.572	1.012	1.158		54444	D4AC					0.831	
164	436.8	0.561	0.993	1.137		54764	D5EC					0.836	
165	445.1	0.551	0.975	1.116		55100	D73C					0.841	
166	453.6	0.541	0.957	1.095		55453	D89D		34			0.846	
167	462.3	0.531	0.939	1.075		55789	D9ED					0.851	
168	471.1	0.521	0.921	1.055		56125	DB3D					0.856	
169	480.1	0.511	0.904	1.035		56444	DC7C					0.861	
170	489.3	0.502	0.888	1.016		56780	DDCC					0.866	
171	498.7	0.492	0.871	0.997		57133	DF2D		35			0.872	
172	508.1	0.483	0.855	0.979		57469	E07D					0.877	
173	517.8	0.474	0.839	0.961		57805	E1CD					0.882	
174	527.7	0.466	0.823	0.943		58141	E31D					0.887	
175	537.7	0.457	0.808	0.925		58461	E45D					0.892	
176	548.0	0.448	0.793	0.908		58813	E5DD		36			0.897	
177	558.5	0.440	0.779	0.891		59150	E70E					0.903	
178	569.2	0.432	0.764	0.874		59486	E85E					0.908	
179	580.0	0.424	0.750	0.859		59805	E99D					0.913	
180	591.1	0.416	0.736	0.843		60141	EAED					0.918	
181	602.4	0.408	0.722	0.827		60494	EC4E		37			0.923	
182	613.9	0.400	0.708	0.812		60830	ED8E					0.928	
183	625.6	0.393	0.696	0.797		61166	EEEE					0.933	
184	637.6	0.385	0.682	0.782		61485	F02D					0.938	
185	649.7	0.379	0.670	0.767		61821	F17D					0.943	
186	662.1	0.372	0.658	0.753		62174	F2DE		38			0.949	
187	674.7	0.365	0.646	0.739		62510	F42E					0.954	
188	687.6	0.358	0.634	0.725		62846	F57E					0.959	
189	700.7	0.352	0.622	0.712		63166	F6BE					0.964	
190	714.1	0.345	0.610	0.699		63502	F80E					0.969	
191	727.8	0.339	0.599	0.686		63855	F96F		39			0.974	
192	741.8	0.332	0.588	0.673		64191	FABF					0.979	
193	756.1	0.326	0.577	0.661		64527	FCDF					0.985	
194	770.7	0.320	0.566	0.648		64846	FD4E					0.989	
195	785.3	0.314	0.556	0.636		65182	FE8E					0.994	
196	800.0	0.308	0.546	0.624		65535	FFFF		40			1.000	

Digital ZOOM (Extended): 1.25

Pelco (BX800) :
Set Zoom Position (0x00,0x4F)
Query Zoom Position (0x00,0x83)

CGI (BX800) :
SetAbsoluteZoomPosition
GetAbsoluteZoomPosition

CGI (BX800) :
SetZoomControl
GetZoomControl

ON/VF (BX800)
Zoom control

Lens		Field of View											
Motor Pulse	Focal Length	Vertical	Horizontal	Diagonal									
Steps	[mm]		[degree]			[DEC]	[HEX]		[DEC]			[DEC]	
1	25.0	9.478	16.735	19.213		0	0		1			0.000	
2	25.5	9.337	16.529	18.926		336	150					0.005	
3	26.0	9.197	16.279	18.640		672	2A0					0.010	
4	26.5	9.056	16.030	18.354		991	3DF					0.015	
5	27.0	8.917	15.782	18.069		1328	530					0.020	
6	27.5	8.778	15.534	17.785		1680	690		2			0.026	
7	28.0	8.639	15.288	17.503		2016	7E0					0.031	
8	28.5	8.497	14.983	17.152		2353	931					0.036	
9	29.1	8.331	14.741	16.874		2672	A70					0.041	
10	29.6	8.196	14.501	16.599		3008	BC0					0.046	
11	30.3	8.029	14.204	16.259		3361	D21		3			0.051	
12	30.9	7.865	13.912	15.923		3697	E71					0.056	
13	31.4	7.735	13.681	15.659		4033	FC1					0.062	
14	32.0	7.575	13.398	15.334		4352	1100					0.066	
15	32.6	7.419	13.120	15.016		4688	1250					0.072	
16	33.3	7.266	12.849	14.704		5041	1391		4			0.077	
17	33.9	7.117	12.584	14.401		5377	1501					0.082	
18	34.5	6.972	12.327	14.105		5713	1651					0.087	
19	35.1	6.832	12.077	13.819		6033	1791					0.092	
20	35.9	6.669	11.789	13.488		6369	18E1					0.097	
21	36.5	6.539	11.558	13.224		6722	1A42		5			0.103	
22	37.3	6.390	11.293	12.920		7058	1B92					0.108	
23	37.9	6.271	11.084	12.680		7394	1CE2					0.113	
24	38.6	6.137	10.845	12.407		7713	1E21					0.118	
25	39.4	6.010	10.620	12.150		8049	1F71					0.123	
26	40.1	5.890	10.408	11.907		8402	20D2		6			0.128	
27	40.8	5.777	10.208	11.677		8738	2222					0.133	
28	41.6	5.670	10.019	11.461		9074	2372					0.138	
29	42.4	5.563	9.831	11.224		9393	2491					0.143	
30	43.3	5.458	9.644	11.032		9729	2601					0.148	
31	44.1	5.353	9.460	10.821		10082	2762		7			0.154	
32	45.0	5.255	9.286	10.623		10418	28B2					0.159	
33	45.9	5.162	9.122	10.435		10754	2A02					0.164	
34	46.8	5.073	8.965	10.257		11074	2B42					0.169	
35	47.6	4.988	8.816	10.086		11410	2C92					0.174	
36	48.5	4.907	8.673	9.922		11763	2DF3		8			0.179	
37	49.4	4.828	8.534	9.763		12099	2F43					0.185	
38	50.3	4.740	8.379	9.586		12435	3093					0.190	
39	51.3	4.665	8.246	9.434		12754	31D2					0.195	
40	52.3	4.580	8.097	9.264		13090	3322					0.200	
41	53.3	4.498	7.951	9.097		13443	3483		9			0.205	
42	54.3	4.417	7.808	8.934		13779	3603					0.210	
43	55.4	4.329	7.652	8.756		14115	3723					0.215	
44	56.4	4.252	7.517	8.601		14435	3863					0.220	
45	57.5	4.168	7.369	8.429		14771	39B3					0.225	
46	58.6	4.088	7.226	8.269		15123	3B13		10			0.231	
47	59.7	4.011	7.088	8.110		15460	3C54					0.236	
48	60.9	3.934	6.954	7.958		15796	3DB4					0.241	
49	62.0	3.861	6.826	7.810		16115	3EF3					0.246	
50	63.1	3.791	6.702	7.669		16451	4043					0.251	
51	64.3	3.717	6.571	7.519		16804	41A4		11			0.256	
52	65.6	3.645	6.445	7.375		17140	42F4					0.262	
53	66.8	3.577	6.326	7.238		17476	4444					0.267	
54	68.1	3.512	6.210	7.106		17795	4583					0.272	
55	69.4	3.450	6.099	6.980		18131	46D3					0.277	
56	70.8	3.384	5.983	6.846		18484	4834		12			0.282	
57	72.1	3.320	5.871	6.719		18820	4984					0.287	
58	73.5	3.259	5.764	6.596		19156	4AD4					0.292	
59	74.9	3.201	5.660	6.478		19476	4C14					0.297	
60	76.3	3.144	5.560	6.363		19812	4D64					0.302	
61	77.8	3.085	5.455	6.242		20165	4EC5		13			0.308	
62	79.3	3.027	5.353	6.126		20501	5015					0.313	
63	80.8	2.971	5.255	6.014		20837	5165					0.318	
64	82.3	2.918	5.160	5.905		21196	52A4					0.323	
65	83.9	2.862	5.061	5.792		21492	53F4					0.328	
66	85.5	2.809	4.966	5.684		21845	5555		14			0.333	
67	87.1	2.756	4.874	5.579		22181	56A5					0.338	
68	88.8	2.706	4.786	5.479		22517	5795					0.343	
69	90.5	2.655	4.695	5.374		22836	5934					0.348	
70	92.2	2.607	4.607	5.273		23173	5A85					0.353	
71	94.0	2.557	4.523	5.177		23525	5BE5		15			0.359	
72	95.8	2.511	4.442	5.084		23861	5D35					0.364	
73	97.6	2.464	4.358	4.988		24198	5E86					0.369	
74	99.5	2.418	4.277	4.895		24517	5FC5					0.374	
75	101.4	2.374	4.199	4.806		24853	6115					0.379	
76	103.4	2.329	4.119	4.715		25206	6276		16			0.385	
77	105.4	2.285	4.042	4.627		25542	63C6					0.390	
78	107.4	2.243	3.968	4.542		25878	6516					0.395	
79	109.5	2.203	3.896	4.460		26197	6655					0.400	
80	111.5	2.161	3.823	4.376		26533	67A5					0.405	
81	113.7	2.121	3.752	4.295		26886	6906		17			0.410	
82	115.8	2.082	3.684	4.217		27222	6A56					0.415	
83	118.0	2.043	3.614	4.137		27558	6BA6					0.421	
84	120.3	2.005	3.547	4.060		27878	6CE6					0.425	
85	122.5	1.968	3.483	3.986		28214	6E36					0.431	
86	124.9	1.932	3.417	3.911		28567	6F97		18			0.436	
87	127.2	1.896	3.354	3.839		28903	70E7					0.441	
88	129.6	1.862	3.293	3.770		29239	7237					0.446	
89	132.1	1.827	3.231	3.699		29558	7376					0.451	
90	134.6	1.793	3.172	3.631		29894	74C6					0.456	
91	137.1	1.759	3.112	3.562		30247	7627		19			0.462	
92	139.9	1.727	3.054	3.496		30583	7777					0.467	
93	142.6	1.695	2.999	3.433		30919	78C7					0.472	
94	145.3	1.663	2.943	3.369		31238	7A06					0.477	
95	148.0

Appendix 3. Table of FOCUS Position vs Subject distance for SX800/801 FW Ver.2.10 and later

1. Precision Control Commands

	SX800	SX801	Commands
Corresponding commands	Pelco		Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)
	CGI		SetAbsoluteZoomPosition GetAbsoluteZoomPosition
		SDK	FF_NET_SetAbsoluteZoomPosition FF_Net_GetAbsoluteZoomPosition

2. Rough Control Commands

	SX800	SX801	Commands
Corresponding commands	OnVIF Preset		Function ID 5,6 ; 1 or 8 step(s) move for near side Function ID 7,8 ; 1 or 8 step(s) move for far side
	CGI		SetFocus (1 step move with MOD1 or INF1) GetFocus
		SDK	FF_NET_SetFocus (1 step move with MOD1 or INF1) FF_NET_GetFocus

Digital Zoom Extended

Focal Length(Digital Zoom OFF)	mm	20	32	51	82	132	212	341	548	800
Focal Length (x1.25)	mm	25	40	64	103	165	265	426	685	1000
Focal Length (x1.50)	mm	30	48	77	123	198	318	512	822	1200
Focal Length (x1.75)	mm	35	56	89	144	231	371	597	959	1400
Focal Length (x2.00)	mm	40	64	102	164	264	424	682	1096	1600
Zoom Position	HEX	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF
Control Resolution *	Pulse	14	35	87	219	550	1378	3458	6605	9571
		Focus Position [HEX]								
Subject Distance [m]	Over near	0000	0000	0000	0000	0000	0000	0000	0000	0000
	10	7DD4	7943	6FE6	5FC5	4A47	3611	2837		
	12	7F46	7BF5	7501	6932	592C	49B7	3F10		
	14	803D	7E34	78EE	7168	667A	5BF4	5439	273E	
	17	8134	7FFF	7D40	79EB	74FA	6EF4	6ADE	460F	
	20	81AF	8158	80C9	7FFF	7E82	7CF5	7B42	5B4E	2B0E
	24	822B	82B1	83ED	85C6	880B	89C5	8AA1	7024	43E6
	28	82A6	8397	85E3	8A08	8E98	92FF	95A5	7EC9	578B
	33	8322	847D	87DA	8DAE	94C0	9B77	9FAF	8C65	6A01
	40		8563	89D0	9154	9AE9	A3D3	A9AC	99D6	7C49
	47	839D	8649	8AFE	93C3	9F47	A9CC	B0B1	A346	8924
	56		86BC	8C2B	9631	A30D	AF39	B726	ABF2	950A
	67	8419	872F	8D59	9852	A66D	B3E4	BCBB	B380	9F50
	79			8E22	99D7	A935	B77A	C116	B95D	A740
	94		87A2	8E87	9B5C	AB64	BABB	C4EE	BE92	AE61
	110		8815	8F50	9C46	AD2E	BD3B	C7E6	C295	B3D7
	130	8494		8FB4	9D2F	AEC5	BF66	CA90	C635	B8CB
	160			9019	9E67	B08E	C1AE	CD54	C9F2	BDEB
	190		8888	907D	9F02	B18D	C34F	CF47	CC89	C170
	220			90E2	9F9E	B28B	C481	D0A9	CE64	C401
	270			9146	A03A	B389	C5CE	D24D	D099	C702
	320				A088	B421	C6C8	D37A	D227	C914
	380				A0D5	B4BA	C7A7	D466	D37D	CAD8
	450			91AB	A123	B520	C84D	D538	D495	CC5E
	530				A171	B585	C8D8	D5E3	D57B	CD9F
	630					B5EB	C963	D680	D64C	CEBC
	750				A1BF	B651	C9B7	D6F6	D6FB	CFAC
	890			920F		B684	CA26	D76C	D78D	D078
	1,100				A20D	B6B6	CA79	D7D5	D820	D148
	1,300					B6E9	CAB1	D817	D882	D1CB
	1,500					B71C	CACD	D84B	D8C8	D22F
	1,800				A25B		CB04	D87F	D914	D29B
	2,100					B74F	CB20	D8B4	D94C	D2E4
	2,500						CB3C	D8CE	D97D	D32C
	3,000						CB58	D8F5	D9AE	D370
	3,500					B782	CB73	D910	D9D1	D39D
	4,200						CB8F	D92A	D9ED	D3CB
	5,000							D937	DA09	D3EF
	6,000						CBAB	D944	DA1E	D40F
	7,100							D951	DA33	D425
	8,400							D95E	DA41	D43C
	Inf	850F	896E	9274	A2A8	B7B5	CBC7	D96C	DA4F	D44E
	Over inf	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF

Digital Zoom OFF and ON

Argument	Focus Position	
	[DEC]	[HEX]
1	0	0000
2	3449	0D79
3	6898	1AF2
4	10348	286C
5	13797	35E5
6	17246	435E
7	20695	50D7
8	24144	5E50
9	27594	6BCA
10	31043	7943
11	34492	86BC
12	37941	9435
13	41391	A1AF
14	44840	AF28
15	48289	BCA1
16	51738	CA1A
17	55187	D793
18	58637	E50D
19	62086	F286
20	65535	FFFF

Digital Zoom Continuous

Focal Length	mm	20	32	51	82	132	212	341	548	800	1000	1200	1400	1600
Zoom Position(Digital Zoom OFF)	HEX	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF				
Zoom Position (x1.25)	HEX	0000	1A42	3483	4EC5	6906	8348	9D89	B7CB	CCCC	FFFF			
Zoom Position (x1.50)	HEX	0000	15E1	2BC3	41A4	5785	6D66	8348	9929	AAAA	D47F	FFFF		
Zoom Position (x1.75)	HEX	0000	12C1	2582	3843	4B05	5DC6	7087	8348	9249	B660	DA77	FFFF	
Zoom Position (x2.00)	HEX	0000	1A42	3483	4EC5	6906	8348	9D89	B7CB	CCCC	AAAA	9249	7FFF	FFFF
Control Resolution *	Pulse	14	35	87	219	550	1378	3458	6605	9571	9571	9571	9571	9571
		Focus Position [HEX]												
Subject Distance	Over near	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
	10m	7DD4	7943	6FE6	5FC5	4A47	3611	2837						
	12	7F46	7BF5	7501	6932	592C	49B7	3F10						
	14	803D	7E34	78EE	7168	667A	5BF4	5439	273E					
	17	8134	7FFF	7D40	79EB	74FA	6EF4	6ADE	460F					
	20	81AF	8158	80C9	7FFF	7E82	7CF5	7B42	5B4E	2B0E	2B0E	2B0E	2B0E	2B0E
	24	822B	82B1	83ED	85C6	880B	89C5	8AA1	7024	43E6	43E6	43E6	43E6	43E6
	28	82A6	8397	85E3	8A08	8E98	92FF	95A5	7EC9	578B	578B	578B	578B	578B
	33	8322	847D	87DA	8DAE	94C0	9B77	9FAF	8C65	6A01	6A01	6A01	6A01	6A01
	40		8563	89D0	9154	9AE9	A3D3	A9AC	99D6	7C49	7C49	7C49	7C49	7C49
	47	839D	8649	8AFE	93C3	9F47	A9CC	B0B1	A346	8924	8924	8924	8924	8924
	56		86BC	8C2B	9631	A30D	AF39	B726	ABF2	950A	950A	950A	950A	950A
	67	8419	872F	8D59	9852	A66D	B3E4	BCBB	B380	9F50	9F50	9F50	9F50	9F50
	79			8E22	99D7	A935	B77A	C116	B95D	A740	A740	A740	A740	A740
	94		87A2	8E87	9B5C	AB64	BABB	C4EE	BE92	AE61	AE61	AE61	AE61	AE61
	110		8815	8F50	9C46	AD2E	BD3B	C7E6	C295	B3D7	B3D7	B3D7	B3D7	B3D7
	130	8494		8FB4	9D2F	AEC5	BF66	CA90	C635	B8CB	B8CB	B8CB	B8CB	B8CB
	160			9019	9E67	B08E	C1AE	CD54	C9F2	BDEB	BDEB	BDEB	BDEB	BDEB
	190		8888	907D	9F02	B18D	C34F	CF47	CC89	C170	C170	C170	C170	C170
	220			90E2	9F9E	B28B	C481	D0A9	CE64	C401	C401	C401	C401	C401
	270			9146	A03A	B389	C5CE	D24D	D099	C702	C702	C702	C702	C702
	320				A088	B421	C6C8	D37A	D227	C914	C914	C914	C914	C914
	380				A0D5	B4BA	C7A7	D466	D37D	CAD8	CAD8	CAD8	CAD8	CAD8
	450			91AB	A123	B520	C84D	D538	D495	CC5E	CC5E	CC5E	CC5E	CC5E
	530				A171	B585	C8D8	D5E3	D57B	CD9F	CD9F	CD9F	CD9F	CD9F
	630					B5EB	C963	D680	D64C	CEBC	CEBC	CEBC	CEBC	CEBC
	750				A1BF	B651	C9B7	D6F6	D6FB	CFAC	CFAC	CFAC	CFAC	CFAC
	890			920F		B684	CA26	D76C	D78D	D078	D078	D078	D078	D078
	1,100				A20D	B6B6	CA79	D7D5	D820	D148	D148	D148	D148	D148
	1,300					B6E9	CAB1	D817	D882	D1CB	D1CB	D1CB	D1CB	D1CB
	1,500					B71C	CACD	D84B	D8C8	D22F	D22F	D22F	D22F	D22F
	1,800				A25B		CB04	D87F	D914	D29B	D29B	D29B	D29B	D29B
	2,100					B74F	CB20	D8B4	D94C	D2E4	D2E4	D2E4	D2E4	D2E4
	2,500						CB3C	D8CE	D97D	D32C	D32C	D32C	D32C	D32C
	3,000						CB58	D8F5	D9AE	D370	D370	D370	D370	D370
	3,500					B782	CB73	D910	D9D1	D39D	D39D	D39D	D39D	D39D
	4,200						CB8F	D92A	D9ED	D3CB	D3CB	D3CB	D3CB	D3CB
	5,000							D937	DA09	D3EF	D3EF	D3EF	D3EF	D3EF
	6,000						CBAB	D944	DA1E	D40F	D40F	D40F	D40F	D40F
	7,100							D951	DA33	D425	D425	D425	D425	D425
	8,400							D95E	DA41	D43C	D43C	D43C	D43C	D43C
	∞	850F	896E	9274	A2A8	B7B5	CBC7	D96C	DA4F	D44E	D44E	D44E	D44E	D44E
	Over inf	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF	FFFF

* Control resolution means the number of drive steps between MOD and INF.

Note: This table is a guide under normal temperature and visible light conditions.

The relationship between Focus Position and Subject Distance changes with temperature and wavelength.