FUJIFILM

Pelco-D Protocol Specification

for SX800, SX801

Nov.09.2022

Version 2.12.0

FUJIFILM

Change history

Ver.	Date			Revision
2.5	2019/7/19			First version
2.51	2010/1/31			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	March 4, 2022			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	March 11, 2022			- 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	April 27, 2022			Clerical error correction
2.12.0	Nov 10 2022			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.

Table of contents

1 Summary

This document specifies the Pelco-D protocol in FUJIFILM CCTV lens / cameras. The CCTV lens / cameras to which this version is applied are as follows.

Applicable model: Long Range Surveillance Camera "FUJIFILM SX800", "FUJIFILM SX801", FW Ver. **2.00** and later

Note: The specification for “FUJIFILM SX801C” is partially different.

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

Since Bit3-Bit7 of CMND1 is not used in the latest Pelco-D, this specification does not support either.

Bit 0 to Bit 4 of CMND2 is used as a PTZ camera control command only when this camera is in HOST mode. (※ for pan head control)

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

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
0x05	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
0x05	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
0x05	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
0x04	OIS	Cumulative drive time (The time OIS is set to ON)
0x05	Thermal	Recording cycle Recording period : 3 years *) Delete from old records Data is managed in units of year, month, date, and time. Temperature data is obtained from the lens.
0x06	Error	Error history of the recording target
Others	Zoom	Cumulative number of moving pulses

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.

5.12.1 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
0x01	Approximately 4 seconds	0x03
0x02	Approximately 6 seconds	0x03
0x03	Approximately 8 seconds	0x02
0x04	Approximately 10 seconds	0x02
0x05	Approximately 12 seconds	0x01
0x06	Approximately 14 seconds	0x01
0x07	Approximately 16 seconds	0x00
0x08	Approximately 18 seconds	0x00
0x09	Approximately 20 seconds	0x00
0x0A	Approximately 22 seconds	0x00
Other	Handled as 0x01 (approximately 4 seconds)	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
0x01	Approximately 4 seconds	0x03
0x02	Approximately 6 seconds	0x03
0x03	Approximately 8 seconds	0x02
0x04	Approximately 10 seconds	0x02
0x05	Approximately 12 seconds	0x01
0x06	Approximately 14 seconds	0x01
0x07	Approximately 16 seconds	0x00
0x08	Approximately 18 seconds	0x00
0x09	Approximately 20 seconds	0x00
0x0A	Approximately 22 seconds	0x00
Other	Handled as 0x01 (approximately 4 seconds)	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

Lens		Field of View			Digital ZOOM : OFF				Digital ZOOM : x1.25			
					Pelco (SX800,801) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX800,801) Zoom control	Pelco (SX800,801) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX800,801) Zoom control *
Motor Pulse	Focal Length	Vertical	Horizontal	Diagonal	CGI (SX800) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX800) : SetZoomControl GetZoomControl		CGI (SX800) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX800) : SetZoomControl GetZoomControl	
Steps	[mm]	[degree]			[DEC]	[HEX]	[DEC]	[DEC]	[DEC]	[HEX]	[DEC]	[DEC]
1	20.0	11.847	20.974	24.017	0	0	1	0.000	0	0	1	0.000
2	20.4	11.672	20.662	23.658	336	150		0.005	269	10D		0.004
3	20.8	11.496	20.349	23.300	672	2A0		0.010	538	21A		0.008
4	21.2	11.321	20.038	22.942	991	3DF		0.015	793	319		0.012
5	21.6	11.146	19.727	22.586	1328	530		0.020	1062	426		0.016
6	22.0	10.972	19.418	22.231	1680	690	2	0.026	1344	540	2	0.021
7	22.4	10.799	19.110	21.878	2016	7E0		0.031	1613	64D		0.025
8	22.9	10.584	18.729	21.440	2353	931		0.036	1882	75A		0.029
9	23.3	10.414	18.426	21.093	2672	A70		0.041	2137	859		0.033
10	23.7	10.245	18.126	20.749	3008	BC0		0.046	2406	966		0.037
11	24.2	10.036	17.755	20.323	3361	D21	3	0.051	2689	A81	3	0.041
12	24.7	9.831	17.390	19.904	3697	E71		0.056	2957	B8D		0.045
13	25.1	9.669	17.102	19.574	4033	FC1		0.062	3226	C9A		0.049
14	25.6	9.469	16.748	19.168	4352	1100		0.066	3482	D9A		0.053
15	26.1	9.274	16.401	18.769	4688	1250		0.072	3751	EA7		0.057
16	26.6	9.083	16.061	18.380	5041	13B1	4	0.077	4033	FC1	4	0.062
17	27.1	8.897	15.730	18.001	5377	1501		0.082	4302	10CE		0.066
18	27.6	8.715	15.409	17.632	5713	1651		0.087	4571	11DB		0.070
19	28.1	8.539	15.097	17.274	6033	1791		0.092	4826	12DA		0.074
20	28.7	8.336	14.736	16.860	6369	18E1		0.097	5095	13E7		0.078
21	29.2	8.174	14.447	16.530	6722	1A42	5	0.103	5377	1501	5	0.082
22	29.8	7.987	14.116	16.151	7058	1B92		0.108	5646	160E		0.086
23	30.3	7.839	13.854	15.850	7394	1CE2		0.113	5915	171B		0.090
24	30.9	7.671	13.556	15.509	7713	1E21		0.118	6170	181A		0.094
25	31.5	7.512	13.275	15.187	8049	1F71		0.123	6439	1927		0.098
26	32.1	7.363	13.010	14.883	8402	20D2	6	0.128	6722	1A42	6	0.103
27	32.7	7.221	12.760	14.597	8738	2222		0.133	6990	1B4E		0.107
28	33.3	7.087	12.524	14.326	9074	2372		0.138	7259	1C5B		0.111
29	34.0	6.941	12.264	14.030	9393	24B1		0.143	7515	1D5B		0.115
30	34.6	6.822	12.055	13.790	9729	2601		0.148	7784	1E68		0.119
31	35.3	6.692	11.824	13.527	10082	2762	7	0.154	8066	1F82	7	0.123
32	36.0	6.569	11.607	13.279	10418	28B2		0.159	8335	208F		0.127
33	36.7	6.452	11.402	13.044	10754	2A02		0.164	8604	219C		0.131
34	37.4	6.341	11.207	12.821	11074	2B42		0.169	8859	229B		0.135
35	38.1	6.236	11.020	12.608	11410	2C92		0.174	9128	23A8		0.139
36	38.8	6.134	10.841	12.403	11763	2DF3	8	0.179	9410	24C2	8	0.144
37	39.5	6.035	10.667	12.204	12099	2F43		0.185	9679	25CF		0.148
38	40.3	5.925	10.473	11.983	12435	3093		0.190	9948	26DC		0.152
39	41.0	5.831	10.307	11.793	12754	31D2		0.195	10203	27DB		0.156
40	41.8	5.726	10.121	11.580	13090	3322		0.200	10472	28E8		0.160
41	42.6	5.622	9.939	11.372	13443	3483	9	0.205	10754	2A02	9	0.164
42	43.4	5.521	9.760	11.168	13779	35D3		0.210	11023	2B0F		0.168
43	44.3	5.411	9.565	10.945	14115	3723		0.215	11292	2C1C		0.172
44	45.1	5.315	9.396	10.752	14435	3863		0.220	11548	2D1C		0.176
45	46.0	5.211	9.212	10.540	14771	39B3		0.225	11816	2E28		0.180
46	46.9	5.109	9.033	10.336	15123	3B13	10	0.231	12099	2F43	10	0.185
47	47.8	5.012	8.860	10.138	15460	3C64		0.236	12368	3050		0.189
48	48.7	4.917	8.693	9.947	15796	3DB4		0.241	12636	315C		0.193
49	49.6	4.826	8.532	9.763	16115	3EF3		0.246	12892	325C		0.197
50	50.5	4.739	8.378	9.587	16451	4043		0.251	13161	3369		0.201
51	51.5	4.646	8.213	9.399	16804	41A4	11	0.256	13443	3483	11	0.205
52	52.5	4.557	8.056	9.219	17140	42F4		0.262	13712	3590		0.209
53	53.5	4.472	7.906	9.047	17476	4444		0.267	13981	369D		0.213
54	54.5	4.390	7.762	8.882	17795	4583		0.272	14236	379C		0.217
55	55.5	4.312	7.624	8.725	18131	46D3		0.277	14505	38A9		0.221
56	56.6	4.230	7.479	8.558	18484	4834	12	0.282	14787	39C3	12	0.226
57	57.7	4.151	7.339	8.398	18820	4984		0.287	15056	3AD0		0.230
58	58.8	4.075	7.205	8.245	19156	4AD4		0.292	15325	3BDD		0.234
59	59.9	4.001	7.075	8.097	19476	4C14		0.297	15581	3CDD		0.238
60	61.0	3.930	6.950	7.954	19812	4D64		0.302	15849	3DE9		0.242
61	62.2	3.856	6.818	7.803	20165	4EC5	13	0.308	16132	3F04	13	0.246
62	63.4	3.784	6.691	7.658	20501	5015		0.313	16401	4011		0.250
63	64.6	3.714	6.568	7.517	20837	5165		0.318	16669	411D		0.254
64	65.8	3.647	6.450	7.382	21156	52A4		0.323	16925	421D		0.258
65	67.1	3.577	6.326	7.241	21492	53F4		0.328	17194	432A		0.262
66	68.4	3.510	6.208	7.105	21845	5555	14	0.333	17476	4444	14	0.267
67	69.7	3.445	6.093	6.974	22181	56A5		0.338	17745	4551		0.271
68	71.0	3.383	5.983	6.848	22517	57F5		0.344	18014	465E		0.275
69	72.4	3.318	5.869	6.717	22836	5934		0.348	18269	475D		0.279
70	73.8	3.256	5.759	6.592	23173	5A85		0.354	18538	486A		0.283
71	75.2	3.197	5.654	6.471	23525	5BE5	15	0.359	18820	4984	15	0.287
72	76.6	3.139	5.552	6.355	23861	5D35		0.364	19089	4A91		0.291
73	78.1	3.080	5.447	6.235	24198	5E86		0.369	19358	4B9E		0.295
74	79.6	3.023	5.346	6.119	24517	5FC5		0.374	19613	4C9D		0.299
75	81.1	2.968	5.249	6.008	24853	6115		0.379	19882	4DAA		0.303
76	82.7	2.911	5.149	5.893	25206	6276	16	0.385	20165	4EC5	16	0.308
77	84.3	2.856	5.053	5.783	25542	63C6		0.390	20433	4FD1		0.312
78	85.9	2.804	4.960	5.677	25878	6516		0.395	20702	50DE		0.316
79	87.5	2.753	4.870	5.574	26197	6655		0.400	20958	51DE		0.320
80	89.2	2.701	4.778	5.469	26533	67A5		0.405	21227	52EB		0.324
81	90.9	2.651	4.690	5.368	26886	6906	17	0.410	21509	5405	17	0.328
82	92.6	2.603	4.605	5.271	27222	6A56		0.415	21778	5512		0.332
83	94.4	2.554	4.518	5.171	27558	6BA6		0.421	22047	561F		0.336
84	96.2	2.507	4.434	5.075	27878	6CE6		0.425	22302	571E		0.340
85	98.0	2.461	4.353	4.983	28214	6E36		0.431	22571	582B		0.344
86	99.9	2.415	4.271	4.889	28567	6F97	18	0.436	22853	5945	18	0.349
87	101.8	2.370	4.192	4.799	28903	70E7		0.441	23122	5A52		0.353
88	103.7	2.327	4.116	4.712	29239	7237		0.446	23391	5B5F		0.357
89	105.7	2.283	4.039	4.624	29558	7376		0.451	23646	5C5E		0.361
90	107.7	2.241	3.965	4.539	29894	74C6		0.456	23915	5D6B		0.365
91	109.8	2.199	3.890	4.453	30247	7627	19	0.462	24198	5E86	19	0.369
92	111.9	2.158	3.818	4.371	30583	7777		0.467	24466	5F92		0.373
93	114.0	2.119	3.749	4.291	30919	78C7		0.472	24735	609F		0.377
94	116.2	2.079	3.679	4.211	31238	7A06		0.477	24991	619F		0.381
95	118.4	2.041	3.611	4.134	31574	7B56		0.482	25260	62AC		0.385
96	120.7	2.003	3.543	4.056	31927	7CB7	20	0.487	25542	63C6	20	0.390
97	123.0	1.966	3.477	3.981	32263	7E07		0.492	25811	64D3		0.394
98	125.3	1.930	3.414	3.908	32599	7F57		0.497	26080	65E0		0.398
99	127.7	1.894	3.350	3.835	32919	8097		0.502	26335	66DF		0.402
100	130.1	1.859	3.289	3.765	33255	81E7		0.507	26604	67EC		0.406
101	132.6	1.824	3.227	3.694	33608	8348	21	0.513	26886	6906	21	0.410
102	135.1	1.791	3.168	3.627	33944	8498		0.518	27155	6A13		0.414
103	137.7	1.757	3.109	3.559	34280	85E8		0.523	27424	6B20		0.418
104	140.4	1.724	3.050	3.492	34599	8727		0.528	27679	6C1F		0.422
105	143.1	1.692	2.993	3.427	34935	8877		0.533	27948	6D2C		0.426
106	145.8	1.661	2.939	3.364	35288	89D8	22	0.538	28230	6E46	22	0.431
107	148.6	1.630	2.884	3.302	35624	8B28		0.544	28499	6F53		0.435
108	151.4	1.601	2.832	3.242	35960	8C78		0.549	28768	7060		0.439
109	154.3	1.571	2.779	3.182	36280	8DB8		0.554	29024	7160		0.443
110	157.3	1.541	2.727	3.122	36616	8F08		0.559	29292	726C		0.447
111	160.3	1.513	2.677	3.064	36968	9068	23	0.564	29575	7387	23	0.451
112	163.4	1.485	2.626	3.007	37305	91B9		0.569	29844	7494		0.455
113	166.5	1.457	2.578	2.951	37641	9309		0.574	30112	75A0		0.459
114	169.7	1.430	2.530	2.896	37960	9448		0.579	30368	76A0		0.463
115	172.9	1.404	2.484	2.843	38296	9598		0.584	30637	77AD		0.467
116	176.2	1.378	2.438	2.790	38649	96F9	24	0.590	30919	78C7	24	0.472
117	179.5	1.353	2.393	2.739	38985	9849		0.595	31188	79D4		0.476
118	183.0	1.327	2.348	2.687	39321	9999		0.600	31457	7AE1		0.480
119	186.4	1.303	2.305	2.639	39640	9AD8		0.605	31712	7BE0		0.484
120	190.0	1.278	2.262	2.589	39976	9C28		0.610	31981	7CED		0.488
121	193.6	1.255	2.220	2.541	40329	9D89	25	0.615	32263	7E07	25	0.492
122	197.3	1.231	2.179	2.494	40665	9ED9		0.621	32532	7F14		0.496
123	201.1	1.209	2.138	2.448	41001	A029		0.626	32801	8021		0.501
124	205.0	1.186	2.098	2.402	41321	A169		0.631	33057	8121		0.504
125	208.9	1.164	2.060	2.358	41657	A2B9		0.636	33325	822D		0.509
126	212.9	1.143	2.022	2.314	42010	A41A	26	0.641	33608	8348	26	0.513
127	217.0	1.121	1.984	2.271	42346	A56A		0.646	33877	8455		0.517
128	221.1	1.101	1.948	2.230	42682	A6BA		0.651	34145	8561		0.521
129	225.3	1.080	1.912	2.188	43001	A7F9		0.656	34401	8661		0.525
130	229.6	1.060	1.876	2.148	43337	A949		0.661	34670	876E		0.529
131	234.0	1.041	1.841	2.108	43690	AAAA	27	0.667	34952	8888	27	0.533
132	238.5	1.021	1.807	2.068	44026	ABFA		0.672	35221	8995		0.537

133	243.0	1.002	1.774	2.030	44362	AD4A		0.677	35490	8AA2		0.542
134	247.7	0.984	1.740	1.992	44681	AE89		0.682	35745	8BA1		0.545
135	252.4	0.966	1.708	1.956	45018	AFDA		0.687	36014	8CAE		0.550
136	257.2	0.948	1.677	1.920	45370	B13A	28	0.692	36296	8DC8	28	0.554
137	262.1	0.930	1.646	1.884	45706	B28A		0.697	36565	8ED5		0.558
138	267.1	0.913	1.615	1.849	46043	B3DB		0.703	36834	8FE2		0.562
139	272.2	0.896	1.585	1.815	46362	B51A		0.707	37089	90E1		0.566
140	277.4	0.879	1.556	1.781	46698	B66A		0.713	37358	91EE		0.570
141	282.7	0.863	1.527	1.748	47051	B7CB	29	0.718	37641	9309	29	0.574
142	288.1	0.847	1.499	1.716	47387	B91B		0.723	37909	9415		0.578
143	293.6	0.831	1.471	1.684	47723	BA6B		0.728	38178	9522		0.583
144	299.2	0.816	1.444	1.653	48042	BBAA		0.733	38434	9622		0.586
145	304.9	0.801	1.417	1.622	48378	BCFA		0.738	38703	972F		0.591
146	310.7	0.786	1.391	1.592	48731	BE5B	30	0.744	38985	9849	30	0.595
147	316.6	0.772	1.365	1.563	49067	BFAB		0.749	39254	9956		0.599
148	322.7	0.757	1.339	1.533	49403	C0FB		0.754	39523	9A63		0.603
149	328.8	0.743	1.315	1.505	49723	C23B		0.759	39778	9B62		0.607
150	335.1	0.729	1.290	1.477	50059	C38B		0.764	40047	9C6F		0.611
151	341.5	0.716	1.266	1.450	50412	C4EC	31	0.769	40329	9D89	31	0.615
152	348.0	0.703	1.243	1.423	50748	C63C		0.774	40598	9E96		0.619
153	354.7	0.689	1.220	1.396	51084	C78C		0.779	40867	9FA3		0.624
154	361.4	0.677	1.197	1.371	51403	C8CB		0.784	41122	A0A2		0.627
155	368.4	0.664	1.175	1.345	51739	CA1B		0.789	41391	A1AF		0.632
156	375.4	0.652	1.153	1.320	52092	CB7C	32	0.795	41674	A2CA	32	0.636
157	382.6	0.640	1.132	1.296	52428	CCCC		0.800	41942	A3D6		0.640
158	389.9	0.628	1.111	1.272	52764	CE1C		0.805	42211	A4E3		0.644
159	397.4	0.616	1.090	1.248	53083	CF5B		0.810	42467	A5E3		0.648
160	405.0	0.605	1.070	1.225	53419	D0AB		0.815	42736	A6F0		0.652
161	412.7	0.594	1.050	1.202	53772	D20C	33	0.821	43018	A80A	33	0.656
162	420.6	0.583	1.031	1.180	54108	D35C		0.826	43287	A917		0.661
163	428.6	0.572	1.012	1.158	54444	D4AC		0.831	43556	AA24		0.665
164	436.8	0.561	0.993	1.137	54764	D5EC		0.836	43811	AB23		0.669
165	445.1	0.551	0.975	1.116	55100	D73C		0.841	44080	AC30		0.673
166	453.6	0.541	0.957	1.095	55453	D89D	34	0.846	44362	AD4A	34	0.677
167	462.3	0.531	0.939	1.075	55789	D9ED		0.851	44631	AE57		0.681
168	471.1	0.521	0.921	1.055	56125	DB3D		0.856	44900	AF64		0.685
169	480.1	0.511	0.904	1.035	56444	DC7C		0.861	45155	B063		0.689
170	489.3	0.502	0.888	1.016	56780	DDCC		0.866	45424	B170		0.693
171	498.6	0.492	0.871	0.997	57133	DF2D	35	0.872	45706	B28A	35	0.697
172	508.1	0.483	0.855	0.979	57469	E07D		0.877	45975	B397		0.702
173	517.8	0.474	0.839	0.961	57805	E1CD		0.882	46244	B4A4		0.706
174	527.7	0.466	0.824	0.943	58125	E30D		0.887	46500	B5A4		0.710
175	537.7	0.457	0.808	0.925	58461	E45D		0.892	46768	B6B0		0.714
176	548.0	0.448	0.793	0.908	58813	E5BD	36	0.897	47051	B7CB	36	0.718
177	558.5	0.440	0.779	0.891	59150	E70E		0.903	47320	B8D8		0.722
178	569.1	0.432	0.764	0.875	59486	E85E		0.908	47588	B9E4		0.726
179	580.0	0.424	0.750	0.859	59805	E99D		0.913	47844	BAE4		0.730
180	591.1	0.416	0.736	0.843	60141	EAED		0.918	48113	BBF1		0.734
181	602.4	0.408	0.722	0.827	60494	EC4E	37	0.923	48395	BD0B	37	0.738
182	613.9	0.401	0.709	0.812	60830	ED9E		0.928	48664	BE18		0.743
183	625.6	0.393	0.696	0.797	61166	EEEE		0.933	48933	BF25		0.747
184	637.6	0.386	0.683	0.782	61485	F02D		0.938	49188	C024		0.751
185	649.7	0.379	0.670	0.767	61821	F17D		0.943	49457	C131		0.755
186	662.1	0.372	0.658	0.753	62174	F2DE	38	0.949	49739	C24B	38	0.759
187	674.7	0.365	0.646	0.739	62510	F42E		0.954	50008	C358		0.763
188	687.6	0.358	0.634	0.725	62846	F57E		0.959	50277	C465		0.767
189	700.7	0.352	0.622	0.712	63166	F6BE		0.964	50533	C565		0.771
190	714.1	0.345	0.610	0.699	63502	F80E		0.969	50801	C671		0.775
191	727.8	0.339	0.599	0.686	63855	F96F	39	0.974	51084	C78C	39	0.779
192	741.8	0.332	0.588	0.673	64191	FABF		0.979	51353	C899		0.784
193	756.1	0.326	0.577	0.661	64527	FC0F		0.985	51621	C9A5		0.788
194	770.7	0.320	0.566	0.648	64846	FD4E		0.989	51877	CAA5		0.792
195	785.3	0.314	0.556	0.636	65182	FE9E		0.995	52146	CBB2		0.796
196	800.0	0.308	0.546	0.624	65535	FFFF	40	1.000	52428	CCCC	40	0.800
197	808.0	0.305	0.540	0.618					52933	CEC5		0.808
198	816.0	0.302	0.535	0.612					53437	D0BD		0.815
199	824.0	0.299	0.530	0.607					53941	D2B5	41	0.823
200	832.0	0.297	0.525	0.601					54445	D4AD		0.831
201	840.0	0.294	0.520	0.595					54949	D6A5	42	0.838
202	848.0	0.291	0.515	0.590					55453	D89D		0.846
203	856.0	0.288	0.510	0.584					55957	DA95		0.854
204	864.0	0.286	0.506	0.579					56461	DC8D	43	0.862
205	872.0	0.283	0.501	0.574					56966	DE86		0.869
206	880.0	0.281	0.497	0.569					57470	E07E	44	0.877
207	888.0	0.278	0.492	0.564					57974	E276		0.885
208	896.0	0.276	0.488	0.559					58478	E46E		0.892
209	904.0	0.273	0.484	0.554					58982	E666	45	0.900
210	912.0	0.271	0.479	0.549					59486	E85E		0.908
211	920.0	0.268	0.475	0.544					59990	EA56	46	0.915
212	928.0	0.266	0.471	0.540					60494	EC4E		0.923
213	936.0	0.264	0.467	0.535					60998	EE46		0.931
214	944.0	0.262	0.463	0.531					61503	F03F	47	0.938
215	952.0	0.259	0.459	0.526					62007	F237		0.946
216	960.0	0.257	0.456	0.522					62511	F42F	48	0.954
217	968.0	0.255	0.452	0.518					63015	F627		0.962
218	976.0	0.253	0.448	0.513					63519	F81F		0.969
219	984.0	0.251	0.445	0.509					64023	FA17	49	0.977
220	992.0	0.249	0.441	0.505					64527	FC0F		0.985
221	1,000.0	0.247	0.438	0.501					65031	FE07		0.992
222	1,000.0	0.247	0.438	0.501					65535	FFFF	50	1.000

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

Lens		Field of View			Digital ZOOM : x1.50			
					Pelco (SX800,801) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			**ONVIF (SX800,801)** Zoom control *
Motor Pulse	Focal Length	Vertical	Horizontal	Diagonal	**CGI (SX800) :** SetAbsoluteZoomPosition GetAbsoluteZoomPosition		**CGI (SX800) :** SetZoomControl GetZoomControl	
Steps	[mm]	[degree]			[DEC]	[HEX]	[DEC]	[DEC]
1	20.0	11.847	20.974	24.017	0	0	1	0.000
2	20.4	11.672	20.662	23.658	224	E0		0.003
3	20.8	11.496	20.349	23.300	448	1C0		0.007
4	21.2	11.321	20.038	22.942	661	295		0.010
5	21.6	11.146	19.727	22.586	885	375		0.014
6	22.0	10.972	19.418	22.231	1120	460	2	0.017
7	22.4	10.799	19.110	21.878	1344	540		0.021
8	22.9	10.584	18.729	21.440	1568	620		0.024
9	23.3	10.414	18.426	21.093	1781	6F5		0.027
10	23.7	10.245	18.126	20.749	2005	7D5		0.031
11	24.2	10.036	17.755	20.323	2241	8C1	3	0.034
12	24.7	9.831	17.390	19.904	2465	9A1		0.038
13	25.1	9.669	17.102	19.574	2689	A81		0.041
14	25.6	9.469	16.748	19.168	2901	B55		0.044
15	26.1	9.274	16.401	18.769	3126	C36		0.048
16	26.6	9.083	16.061	18.380	3361	D21	4	0.051
17	27.1	8.897	15.730	18.001	3585	E01		0.055
18	27.6	8.715	15.409	17.632	3809	EE1		0.058
19	28.1	8.539	15.097	17.274	4022	FB6		0.061
20	28.7	8.336	14.736	16.860	4246	1096		0.065
21	29.2	8.174	14.447	16.530	4481	1181	5	0.068
22	29.8	7.987	14.116	16.151	4705	1261		0.072
23	30.3	7.839	13.854	15.850	4929	1341		0.075
24	30.9	7.671	13.556	15.509	5142	1416		0.078
25	31.5	7.512	13.275	15.187	5366	14F6		0.082
26	32.1	7.363	13.010	14.883	5601	15E1	6	0.085
27	32.7	7.221	12.760	14.597	5825	16C1		0.089
28	33.3	7.087	12.524	14.326	6049	17A1		0.092
29	34.0	6.941	12.264	14.030	6262	1876		0.096
30	34.6	6.822	12.055	13.790	6486	1956		0.099
31	35.3	6.692	11.824	13.527	6722	1A42	7	0.103
32	36.0	6.569	11.607	13.279	6946	1B22		0.106
33	36.7	6.452	11.402	13.044	7170	1C02		0.109
34	37.4	6.341	11.207	12.821	7382	1CD6		0.113
35	38.1	6.236	11.020	12.608	7607	1DB7		0.116
36	38.8	6.134	10.841	12.403	7842	1EA2	8	0.120
37	39.5	6.035	10.667	12.204	8066	1F82		0.123
38	40.3	5.925	10.473	11.983	8290	2062		0.126
39	41.0	5.831	10.307	11.793	8503	2137		0.130
40	41.8	5.726	10.121	11.580	8727	2217		0.133
41	42.6	5.622	9.939	11.372	8962	2302	9	0.137
42	43.4	5.521	9.760	11.168	9186	23E2		0.140
43	44.3	5.411	9.565	10.945	9410	24C2		0.144
44	45.1	5.315	9.396	10.752	9623	2597		0.147
45	46.0	5.211	9.212	10.540	9847	2677		0.150
46	46.9	5.109	9.033	10.336	10082	2762	10	0.154
47	47.8	5.012	8.860	10.138	10306	2842		0.157
48	48.7	4.917	8.693	9.947	10530	2922		0.161
49	49.6	4.826	8.532	9.763	10743	29F7		0.164
50	50.5	4.739	8.378	9.587	10967	2AD7		0.167
51	51.5	4.646	8.213	9.399	11203	2BC3	11	0.171
52	52.5	4.557	8.056	9.219	11427	2CA3		0.174
53	53.5	4.472	7.906	9.047	11651	2D83		0.178
54	54.5	4.390	7.762	8.882	11864	2E58		0.181
55	55.5	4.312	7.624	8.725	12088	2F38		0.184
56	56.6	4.230	7.479	8.558	12323	3023	12	0.188
57	57.7	4.151	7.339	8.398	12547	3103		0.191
58	58.8	4.075	7.205	8.245	12771	31E3		0.195
59	59.9	4.001	7.075	8.097	12984	32B8		0.198
60	61.0	3.930	6.950	7.954	13208	3398		0.202
61	62.2	3.856	6.818	7.803	13443	3483	13	0.205
62	63.4	3.784	6.691	7.658	13667	3563		0.209
63	64.6	3.714	6.568	7.517	13891	3643		0.212
64	65.8	3.647	6.450	7.382	14104	3718		0.215
65	67.1	3.577	6.326	7.241	14328	37F8		0.219
66	68.4	3.510	6.208	7.105	14563	38E3	14	0.222
67	69.7	3.445	6.093	6.974	14787	39C3		0.226
68	71.0	3.383	5.983	6.848	15011	3AA3		0.229
69	72.4	3.318	5.869	6.717	15224	3B78		0.232
70	73.8	3.256	5.759	6.592	15448	3C58		0.236
71	75.2	3.197	5.654	6.471	15684	3D44	15	0.239
72	76.6	3.139	5.552	6.355	15908	3E24		0.243
73	78.1	3.080	5.447	6.235	16132	3F04		0.246
74	79.6	3.023	5.346	6.119	16345	3FD9		0.249
75	81.1	2.968	5.249	6.008	16569	40B9		0.253
76	82.7	2.911	5.149	5.893	16804	41A4	16	0.256
77	84.3	2.856	5.053	5.783	17028	4284		0.260
78	85.9	2.804	4.960	5.677	17252	4364		0.263
79	87.5	2.753	4.870	5.574	17465	4439		0.266
80	89.2	2.701	4.778	5.469	17689	4519		0.270
81	90.9	2.651	4.690	5.368	17924	4604	17	0.274
82	92.6	2.603	4.605	5.271	18148	46E4		0.277
83	94.4	2.554	4.518	5.171	18372	47C4		0.280
84	96.2	2.507	4.434	5.075	18585	4899		0.284
85	98.0	2.461	4.353	4.983	18809	4979		0.287
86	99.9	2.415	4.271	4.889	19044	4A64	18	0.291
87	101.8	2.370	4.192	4.799	19268	4B44		0.294
88	103.7	2.327	4.116	4.712	19492	4C24		0.297
89	105.7	2.283	4.039	4.624	19705	4CF9		0.301
90	107.7	2.241	3.965	4.539	19929	4DD9		0.304
91	109.8	2.199	3.890	4.453	20165	4EC5	19	0.308
92	111.9	2.158	3.818	4.371	20389	4FA5		0.311
93	114.0	2.119	3.749	4.291	20613	5085		0.315
94	116.2	2.079	3.679	4.211	20826	515A		0.318
95	118.4	2.041	3.611	4.134	21050	523A		0.321
96	120.7	2.003	3.543	4.056	21285	5325	20	0.325
97	123.0	1.966	3.477	3.981	21509	5405		0.328
98	125.3	1.930	3.414	3.908	21733	54E5		0.332
99	127.7	1.894	3.350	3.835	21946	55BA		0.335
100	130.1	1.859	3.289	3.765	22170	569A		0.338
101	132.6	1.824	3.227	3.694	22405	5785	21	0.342
102	135.1	1.791	3.168	3.627	22629	5865		0.345
103	137.7	1.757	3.109	3.559	22853	5945		0.349
104	140.4	1.724	3.050	3.492	23066	5A1A		0.352
105	143.1	1.692	2.993	3.427	23290	5AFA		0.355
106	145.8	1.661	2.939	3.364	23525	5BE5	22	0.359
107	148.6	1.630	2.884	3.302	23749	5CC5		0.362
108	151.4	1.601	2.832	3.242	23973	5DA5		0.366
109	154.3	1.571	2.779	3.182	24186	5E7A		0.369
110	157.3	1.541	2.727	3.122	24410	5F5A		0.372
111	160.3	1.513	2.677	3.064	24646	6046	23	0.376
112	163.4	1.485	2.626	3.007	24870	6126		0.379
113	166.5	1.457	2.578	2.951	25094	6206		0.383
114	169.7	1.430	2.530	2.896	25307	62DB		0.386
115	172.9	1.404	2.484	2.843	25531	63BB		0.390
116	176.2	1.378	2.438	2.790	25766	64A6	24	0.393
117	179.5	1.353	2.393	2.739	25990	6586		0.397
118	183.0	1.327	2.348	2.687	26214	6666		0.400
119	186.4	1.303	2.305	2.639	26427	673B		0.403
120	190.0	1.278	2.262	2.589	26651	681B		0.407
121	193.6	1.255	2.220	2.541	26886	6906	25	0.410
122	197.3	1.231	2.179	2.494	27110	69E6		0.414
123	201.1	1.209	2.138	2.448	27334	6AC6		0.417
124	205.0	1.186	2.098	2.402	27547	6B9B		0.420
125	208.9	1.164	2.060	2.358	27771	6C7B		0.424
126	212.9	1.143	2.022	2.314	28006	6D66	26	0.427
127	217.0	1.121	1.984	2.271	28230	6E46		0.431
128	221.1	1.101	1.948	2.230	28455	6F27		0.434
129	225.3	1.080	1.912	2.188	28667	6FFB		0.437
130	229.6	1.060	1.876	2.148	28891	70DB		0.441
131	234.0	1.041	1.841	2.108	29127	71C7	27	0.444
132	238.5	1.021	1.807	2.068	29351	72A7		0.448
133	243.0	1.002	1.774	2.030	29575	7387		0.451
134	247.7	0.984	1.740	1.992	29788	745C		0.455

135	252.4	0.966	1.708	1.956
136	257.2	0.948	1.677	1.920
137	262.1	0.930	1.646	1.884
138	267.1	0.913	1.615	1.849
139	272.2	0.896	1.585	1.815
140	277.4	0.879	1.556	1.781
141	282.7	0.863	1.527	1.748
142	288.1	0.847	1.499	1.716
143	293.6	0.831	1.471	1.684
144	299.2	0.816	1.444	1.653
145	304.9	0.801	1.417	1.622
146	310.7	0.786	1.391	1.592
147	316.6	0.772	1.365	1.563
148	322.7	0.757	1.339	1.533
149	328.8	0.743	1.315	1.505
150	335.1	0.729	1.290	1.477
151	341.5	0.716	1.266	1.450
152	348.0	0.703	1.243	1.423
153	354.7	0.689	1.220	1.396
154	361.4	0.677	1.197	1.371
155	368.4	0.664	1.175	1.345
156	375.4	0.652	1.153	1.320
157	382.6	0.640	1.132	1.296
158	389.9	0.628	1.111	1.272
159	397.4	0.616	1.090	1.248
160	405.0	0.605	1.070	1.225
161	412.7	0.594	1.050	1.202
162	420.6	0.583	1.031	1.180
163	428.6	0.572	1.012	1.158
164	436.8	0.561	0.993	1.137
165	445.1	0.551	0.975	1.116
166	453.6	0.541	0.957	1.095
167	462.3	0.531	0.939	1.075
168	471.1	0.521	0.921	1.055
169	480.1	0.511	0.904	1.035
170	489.3	0.502	0.888	1.016
171	498.6	0.492	0.871	0.997
172	508.1	0.483	0.855	0.979
173	517.8	0.474	0.839	0.961
174	527.7	0.466	0.824	0.943
175	537.7	0.457	0.808	0.925
176	548.0	0.448	0.793	0.908
177	558.5	0.440	0.779	0.891
178	569.1	0.432	0.764	0.875
179	580.0	0.424	0.750	0.859
180	591.1	0.416	0.736	0.843
181	602.4	0.408	0.722	0.827
182	613.9	0.401	0.709	0.812
183	625.6	0.393	0.696	0.797
184	637.6	0.386	0.683	0.782
185	649.7	0.379	0.670	0.767
186	662.1	0.372	0.658	0.753
187	674.7	0.365	0.646	0.739
188	687.6	0.358	0.634	0.725
189	700.7	0.352	0.622	0.712
190	714.1	0.345	0.610	0.699
191	727.8	0.339	0.599	0.686
192	741.8	0.332	0.588	0.673
193	756.1	0.326	0.577	0.661
194	770.7	0.320	0.566	0.648
195	785.3	0.314	0.556	0.636
196	800.0	0.308	0.546	0.624
197	808.0	0.305	0.540	0.618
198	816.0	0.302	0.535	0.612
199	824.0	0.299	0.530	0.607
200	832.0	0.297	0.525	0.601
201	840.0	0.294	0.520	0.595
202	848.0	0.291	0.515	0.590
203	856.0	0.288	0.510	0.584
204	864.0	0.286	0.506	0.579
205	872.0	0.283	0.501	0.574
206	880.0	0.281	0.497	0.569
207	888.0	0.278	0.492	0.564
208	896.0	0.276	0.488	0.559
209	904.0	0.273	0.484	0.554
210	912.0	0.271	0.479	0.549
211	920.0	0.268	0.475	0.544
212	928.0	0.266	0.471	0.540
213	936.0	0.264	0.467	0.535
214	944.0	0.262	0.463	0.531
215	952.0	0.259	0.459	0.526
216	960.0	0.257	0.456	0.522
217	968.0	0.255	0.452	0.518
218	976.0	0.253	0.448	0.513
219	984.0	0.251	0.445	0.509
220	992.0	0.249	0.441	0.505
221	1,000.0	0.247	0.438	0.501
222	1,008.0	0.245	0.434	0.497
223	1016.0	0.243	0.431	0.494
224	1024.0	0.241	0.427	0.490
225	1032.0	0.239	0.424	0.486
226	1040.0	0.238	0.421	0.482
227	1048.0	0.236	0.418	0.479
228	1056.0	0.234	0.415	0.475
229	1064.0	0.232	0.412	0.472
230	1072.0	0.230	0.408	0.468
231	1080.0	0.229	0.405	0.465
232	1088.0	0.227	0.403	0.461
233	1096.0	0.225	0.400	0.458
234	1104.0	0.224	0.397	0.455
235	1112.0	0.222	0.394	0.451
236	1120.0	0.221	0.391	0.448
237	1128.0	0.219	0.388	0.445
238	1136.0	0.217	0.386	0.442
239	1144.0	0.216	0.383	0.439
240	1152.0	0.214	0.380	0.436
241	1160.0	0.213	0.378	0.433
242	1168.0	0.212	0.375	0.430
243	1176.0	0.210	0.373	0.427
244	1184.0	0.209	0.370	0.424
245	1192.0	0.207	0.368	0.421
246	1200.0	0.206	0.365	0.419
247	1200.0	0.206	0.365	0.419

30012	753C		0.458
30247	7627	28	0.462
30471	7707		0.465
30695	77E7		0.468
30908	78BC		0.472
31132	799C		0.475
31367	7A87	29	0.479
31591	7B67		0.482
31815	7C47		0.485
32028	7D1C		0.489
32252	7DFC		0.492
32487	7EE7	30	0.496
32711	7FC7		0.499
32936	80A8		0.503
33148	817C		0.506
33372	825C		0.509
33608	8348	31	0.513
33832	8428		0.516
34056	8508		0.520
34269	85DD		0.523
34493	86BD		0.526
34728	87A8	32	0.530
34952	8888		0.533
35176	8968		0.537
35389	8A3D		0.540
35613	8B1D		0.543
35848	8C08	33	0.547
36072	8CE8		0.550
36296	8DC8		0.554
36509	8E9D		0.557
36733	8F7D		0.561
36968	9068	34	0.564
37193	9149		0.568
37417	9229		0.571
37629	92FD		0.574
37853	93DD		0.578
38089	94C9	35	0.581
38313	95A9		0.585
38537	9689		0.588
38750	975E		0.591
38974	983E		0.595
39209	9929	36	0.598
39433	9A09		0.602
39657	9AE9		0.605
39870	9BBE		0.608
40094	9C9E		0.612
40329	9D89	37	0.615
40553	9E69		0.619
40777	9F49		0.622
40990	A01E		0.625
41214	A0FE		0.629
41449	A1E9	38	0.632
41674	A2CA		0.636
41898	A3AA		0.639
42110	A47E		0.643
42334	A55E		0.646
42570	A64A	39	0.650
42794	A72A		0.653
43018	A80A		0.656
43231	A8DF		0.660
43455	A9BF		0.663
43690	AAAA	40	0.667
44119	AC57		0.673
44547	AE03		0.680
44975	AFAF	41	0.686
45404	B15C		0.693
45832	B308	42	0.699
46260	B4B4		0.706
46689	B661		0.712
47117	B80D	43	0.719
47545	B9B9		0.725
47974	BB66	44	0.732
48402	BD12		0.739
48830	BEBE		0.745
49259	C06B	45	0.752
49687	C217		0.758
50115	C3C3	46	0.765
50544	C570		0.771
50972	C71C		0.778
51400	C8C8	47	0.784
51829	CA75		0.791
52257	CC21	48	0.797
52685	CDCD		0.804
53114	CF7A		0.810
53542	D126	49	0.817
53970	D2D2		0.824
54399	D47F	50	0.830
54827	D62B		0.837
55255	D7D7		0.843
55684	D984	51	0.850
56112	DB30		0.856
56540	DCDC	52	0.863
56969	DE89		0.869
57397	E035		0.876
57825	E1E1	53	0.882
58254	E38E		0.889
58682	E53A	54	0.895
59110	E6E6		0.902
59539	E893		0.909
59967	EA3F	55	0.915
60395	EBEB		0.922
60824	ED98	56	0.928
61252	EF44		0.935
61680	F0F0		0.941
62109	F29D	57	0.948
62537	F449		0.954
62965	F5F5	58	0.961
63394	F7A2		0.967
63822	F94E		0.974
64250	FAFA	59	0.980
64679	FCA7		0.987
65107	FE53		0.993
65535	FFFF	60	1.000

Lens		Field of View			Digital ZOOM : x1.75			
					Pelco (SX800,801) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX800,801) Zoom control *
Motor Pulse	Focal Length	Vertical	Horizontal	Diagonal	CGI (SX800) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX800) : SetZoomControl GetZoomControl	
Steps	[mm]	[degree]			[DEC]	[HEX]	[DEC]	[DEC]
1	20.0	11.847	20.974	24.017	0	0	1	0.000
2	20.4	11.672	20.662	23.658	192	C0		0.003
3	20.8	11.496	20.349	23.300	384	180		0.006
4	21.2	11.321	20.038	22.942	567	237		0.009
5	21.6	11.146	19.727	22.586	759	2F7		0.012
6	22.0	10.972	19.418	22.231	960	3C0	2	0.015
7	22.4	10.799	19.110	21.878	1152	480		0.018
8	22.9	10.584	18.729	21.440	1344	540		0.021
9	23.3	10.414	18.426	21.093	1527	5F7		0.023
10	23.7	10.245	18.126	20.749	1719	6B7		0.026
11	24.2	10.036	17.755	20.323	1920	780	3	0.029
12	24.7	9.831	17.390	19.904	2113	841		0.032
13	25.1	9.669	17.102	19.574	2305	901		0.035
14	25.6	9.469	16.748	19.168	2487	9B7		0.038
15	26.1	9.274	16.401	18.769	2679	A77		0.041
16	26.6	9.083	16.061	18.380	2881	B41	4	0.044
17	27.1	8.897	15.730	18.001	3073	C01		0.047
18	27.6	8.715	15.409	17.632	3265	CC1		0.050
19	28.1	8.539	15.097	17.274	3447	D77		0.053
20	28.7	8.336	14.736	16.860	3639	E37		0.056
21	29.2	8.174	14.447	16.530	3841	F01	5	0.059
22	29.8	7.987	14.116	16.151	4033	FC1		0.062
23	30.3	7.839	13.854	15.850	4225	1081		0.064
24	30.9	7.671	13.556	15.509	4407	1137		0.067
25	31.5	7.512	13.275	15.187	4600	11F8		0.070
26	32.1	7.363	13.010	14.883	4801	12C1	6	0.073
27	32.7	7.221	12.760	14.597	4993	1381		0.076
28	33.3	7.087	12.524	14.326	5185	1441		0.079
29	34.0	6.941	12.264	14.030	5368	14F8		0.082
30	34.6	6.822	12.055	13.790	5560	15B8		0.085
31	35.3	6.692	11.824	13.527	5761	1681	7	0.088
32	36.0	6.569	11.607	13.279	5953	1741		0.091
33	36.7	6.452	11.402	13.044	6145	1801		0.094
34	37.4	6.341	11.207	12.821	6328	18B8		0.097
35	38.1	6.236	11.020	12.608	6520	1978		0.099
36	38.8	6.134	10.841	12.403	6722	1A42	8	0.103
37	39.5	6.035	10.667	12.204	6914	1B02		0.106
38	40.3	5.925	10.473	11.983	7106	1BC2		0.108
39	41.0	5.831	10.307	11.793	7288	1C78		0.111
40	41.8	5.726	10.121	11.580	7480	1D38		0.114
41	42.6	5.622	9.939	11.372	7682	1E02	9	0.117
42	43.4	5.521	9.760	11.168	7874	1EC2		0.120
43	44.3	5.411	9.565	10.945	8066	1F82		0.123
44	45.1	5.315	9.396	10.752	8248	2038		0.126
45	46.0	5.211	9.212	10.540	8440	20F8		0.129
46	46.9	5.109	9.033	10.336	8642	21C2	10	0.132
47	47.8	5.012	8.860	10.138	8834	2282		0.135
48	48.7	4.917	8.693	9.947	9026	2342		0.138
49	49.6	4.826	8.532	9.763	9209	23F9		0.141
50	50.5	4.739	8.378	9.587	9401	24B9		0.143
51	51.5	4.646	8.213	9.399	9602	2582	11	0.147
52	52.5	4.557	8.056	9.219	9794	2642		0.149
53	53.5	4.472	7.906	9.047	9986	2702		0.152
54	54.5	4.390	7.762	8.882	10169	27B9		0.155
55	55.5	4.312	7.624	8.725	10361	2879		0.158
56	56.6	4.230	7.479	8.558	10563	2943	12	0.161
57	57.7	4.151	7.339	8.398	10755	2A03		0.164
58	58.8	4.075	7.205	8.245	10947	2AC3		0.167
59	59.9	4.001	7.075	8.097	11129	2B79		0.170
60	61.0	3.930	6.950	7.954	11321	2C39		0.173
61	62.2	3.856	6.818	7.803	11523	2D03	13	0.176
62	63.4	3.784	6.691	7.658	11715	2DC3		0.179
63	64.6	3.714	6.568	7.517	11907	2E83		0.182
64	65.8	3.647	6.450	7.382	12089	2F39		0.184
65	67.1	3.577	6.326	7.241	12281	2FF9		0.187
66	68.4	3.510	6.208	7.105	12483	30C3	14	0.190
67	69.7	3.445	6.093	6.974	12675	3183		0.193
68	71.0	3.383	5.983	6.848	12867	3243		0.196
69	72.4	3.318	5.869	6.717	13050	32FA		0.199
70	73.8	3.256	5.759	6.592	13242	33BA		0.202
71	75.2	3.197	5.654	6.471	13443	3483	15	0.205
72	76.6	3.139	5.552	6.355	13635	3543		0.208
73	78.1	3.080	5.447	6.235	13827	3603		0.211
74	79.6	3.023	5.346	6.119	14010	36BA		0.214
75	81.1	2.968	5.249	6.008	14202	377A		0.217
76	82.7	2.911	5.149	5.893	14403	3843	16	0.220
77	84.3	2.856	5.053	5.783	14596	3904		0.223
78	85.9	2.804	4.960	5.677	14788	39C4		0.226
79	87.5	2.753	4.870	5.574	14970	3A7A		0.228
80	89.2	2.701	4.778	5.469	15162	3B3A		0.231
81	90.9	2.651	4.690	5.368	15364	3C04	17	0.234
82	92.6	2.603	4.605	5.271	15556	3CC4		0.237
83	94.4	2.554	4.518	5.171	15748	3D84		0.240
84	96.2	2.507	4.434	5.075	15930	3E3A		0.243
85	98.0	2.461	4.353	4.983	16122	3EFA		0.246
86	99.9	2.415	4.271	4.889	16324	3FC4	18	0.249
87	101.8	2.370	4.192	4.799	16516	4084		0.252
88	103.7	2.327	4.116	4.712	16708	4144		0.255
89	105.7	2.283	4.039	4.624	16890	41FA		0.258
90	107.7	2.241	3.965	4.539	17083	42BB		0.261
91	109.8	2.199	3.890	4.453	17284	4384	19	0.264
92	111.9	2.158	3.818	4.371	17476	4444		0.267
93	114.0	2.119	3.749	4.291	17668	4504		0.270
94	116.2	2.079	3.679	4.211	17851	45BB		0.272
95	118.4	2.041	3.611	4.134	18043	467B		0.275
96	120.7	2.003	3.543	4.056	18244	4744	20	0.278
97	123.0	1.966	3.477	3.981	18436	4804		0.281
98	125.3	1.930	3.414	3.908	18628	48C4		0.284
99	127.7	1.894	3.350	3.835	18811	497B		0.287
100	130.1	1.859	3.289	3.765	19003	4A3B		0.290
101	132.6	1.824	3.227	3.694	19205	4B05	21	0.293
102	135.1	1.791	3.168	3.627	19397	4BC5		0.296
103	137.7	1.757	3.109	3.559	19589	4C85		0.299
104	140.4	1.724	3.050	3.492	19771	4D3B		0.302
105	143.1	1.692	2.993	3.427	19963	4DFB		0.305
106	145.8	1.661	2.939	3.364	20165	4EC5	22	0.308
107	148.6	1.630	2.884	3.302	20357	4F85		0.311
108	151.4	1.601	2.832	3.242	20549	5045		0.314
109	154.3	1.571	2.779	3.182	20731	50FB		0.316
110	157.3	1.541	2.727	3.122	20923	51BB		0.319
111	160.3	1.513	2.677	3.064	21125	5285	23	0.322
112	163.4	1.485	2.626	3.007	21317	5345		0.325
113	166.5	1.457	2.578	2.951	21509	5405		0.328
114	169.7	1.430	2.530	2.896	21692	54BC		0.331
115	172.9	1.404	2.484	2.843	21884	557C		0.334
116	176.2	1.378	2.438	2.790	22085	5645	24	0.337
117	179.5	1.353	2.393	2.739	22277	5705		0.340
118	183.0	1.327	2.348	2.687	22469	57C5		0.343
119	186.4	1.303	2.305	2.639	22652	587C		0.346
120	190.0	1.278	2.262	2.589	22844	593C		0.349
121	193.6	1.255	2.220	2.541	23046	5A06	25	0.352
122	197.3	1.231	2.179	2.494	23238	5AC6		0.355
123	201.1	1.209	2.138	2.448	23430	5B86		0.358
124	205.0	1.186	2.098	2.402	23612	5C3C		0.360
125	208.9	1.164	2.060	2.358	23804	5CFC		0.363
126	212.9	1.143	2.022	2.314	24006	5DC6	26	0.366
127	217.0	1.121	1.984	2.271	24198	5E86		0.369
128	221.1	1.101	1.948	2.230	24390	5F46		0.372
129	225.3	1.080	1.912	2.188	24572	5FFC		0.375
130	229.6	1.060	1.876	2.148	24764	60BC		0.378
131	234.0	1.041	1.841	2.108	24966	6186	27	0.381
132	238.5	1.021	1.807	2.068	25158	6246		0.384
133	243.0	1.002	1.774	2.030	25350	6306		0.387
134	247.7	0.984	1.740	1.992	25533	63BD		0.390

135	252.4	0.966	1.708	1.956
136	257.2	0.948	1.677	1.920
137	262.1	0.930	1.646	1.884
138	267.1	0.913	1.615	1.849
139	272.2	0.896	1.585	1.815
140	277.4	0.879	1.556	1.781
141	282.7	0.863	1.527	1.748
142	288.1	0.847	1.499	1.716
143	293.6	0.831	1.471	1.684
144	299.2	0.816	1.444	1.653
145	304.9	0.801	1.417	1.622
146	310.7	0.786	1.391	1.592
147	316.6	0.772	1.365	1.563
148	322.7	0.757	1.339	1.533
149	328.8	0.743	1.315	1.505
150	335.1	0.729	1.290	1.477
151	341.5	0.716	1.266	1.450
152	348.0	0.703	1.243	1.423
153	354.7	0.689	1.220	1.396
154	361.4	0.677	1.197	1.371
155	368.4	0.664	1.175	1.345
156	375.4	0.652	1.153	1.320
157	382.6	0.640	1.132	1.296
158	389.9	0.628	1.111	1.272
159	397.4	0.616	1.090	1.248
160	405.0	0.605	1.070	1.225
161	412.7	0.594	1.050	1.202
162	420.6	0.583	1.031	1.180
163	428.6	0.572	1.012	1.158
164	436.8	0.561	0.993	1.137
165	445.1	0.551	0.975	1.116
166	453.6	0.541	0.957	1.095
167	462.3	0.531	0.939	1.075
168	471.1	0.521	0.921	1.055
169	480.1	0.511	0.904	1.035
170	489.3	0.502	0.888	1.016
171	498.6	0.492	0.871	0.997
172	508.1	0.483	0.855	0.979
173	517.8	0.474	0.839	0.961
174	527.7	0.466	0.824	0.943
175	537.7	0.457	0.808	0.925
176	548.0	0.448	0.793	0.908
177	558.5	0.440	0.779	0.891
178	569.1	0.432	0.764	0.875
179	580.0	0.424	0.750	0.859
180	591.1	0.416	0.736	0.843
181	602.4	0.408	0.722	0.827
182	613.9	0.401	0.709	0.812
183	625.6	0.393	0.696	0.797
184	637.6	0.386	0.683	0.782
185	649.7	0.379	0.670	0.767
186	662.1	0.372	0.658	0.753
187	674.7	0.365	0.646	0.739
188	687.6	0.358	0.634	0.725
189	700.7	0.352	0.622	0.712
190	714.1	0.345	0.610	0.699
191	727.8	0.339	0.599	0.686
192	741.8	0.332	0.588	0.673
193	756.1	0.326	0.577	0.661
194	770.7	0.320	0.566	0.648
195	785.3	0.314	0.556	0.636
196	800.0	0.308	0.546	0.624
197	808.0	0.305	0.540	0.618
198	816.0	0.302	0.535	0.612
199	824.0	0.299	0.530	0.607
200	832.0	0.297	0.525	0.601
201	840.0	0.294	0.520	0.595
202	848.0	0.291	0.515	0.590
203	856.0	0.288	0.510	0.584
204	864.0	0.286	0.506	0.579
205	872.0	0.283	0.501	0.574
206	880.0	0.281	0.497	0.569
207	888.0	0.278	0.492	0.564
208	896.0	0.276	0.488	0.559
209	904.0	0.273	0.484	0.554
210	912.0	0.271	0.479	0.549
211	920.0	0.268	0.475	0.544
212	928.0	0.266	0.471	0.540
213	936.0	0.264	0.467	0.535
214	944.0	0.262	0.463	0.531
215	952.0	0.259	0.459	0.526
216	960.0	0.257	0.456	0.522
217	968.0	0.255	0.452	0.518
218	976.0	0.253	0.448	0.513
219	984.0	0.251	0.445	0.509
220	992.0	0.249	0.441	0.505
221	1,000.0	0.247	0.438	0.501
222	1,008.0	0.245	0.434	0.497
223	1016.0	0.243	0.431	0.494
224	1024.0	0.241	0.427	0.490
225	1032.0	0.239	0.424	0.486
226	1040.0	0.238	0.421	0.482
227	1048.0	0.236	0.418	0.479
228	1056.0	0.234	0.415	0.475
229	1064.0	0.232	0.412	0.472
230	1072.0	0.230	0.408	0.468
231	1080.0	0.229	0.405	0.465
232	1088.0	0.227	0.403	0.461
233	1096.0	0.225	0.400	0.458
234	1104.0	0.224	0.397	0.455
235	1112.0	0.222	0.394	0.451
236	1120.0	0.221	0.391	0.448
237	1128.0	0.219	0.388	0.445
238	1136.0	0.217	0.386	0.442
239	1144.0	0.216	0.383	0.439
240	1152.0	0.214	0.380	0.436
241	1160.0	0.213	0.378	0.433
242	1168.0	0.212	0.375	0.430
243	1176.0	0.210	0.373	0.427
244	1184.0	0.209	0.370	0.424
245	1192.0	0.207	0.368	0.421
246	1200.0	0.206	0.365	0.419
247	1208.0	0.205	0.363	0.416
248	1216.0	0.203	0.360	0.413
249	1224.0	0.202	0.358	0.410
250	1232.0	0.201	0.356	0.408
251	1240.0	0.199	0.353	0.405
252	1248.0	0.198	0.351	0.403
253	1256.0	0.197	0.349	0.400
254	1264.0	0.196	0.347	0.398
255	1272.0	0.194	0.345	0.395
256	1280.0	0.193	0.343	0.393
257	1288.0	0.192	0.340	0.390
258	1296.0	0.191	0.338	0.388
259	1304.0	0.190	0.336	0.385
260	1312.0	0.188	0.334	0.383
261	1320.0	0.187	0.332	0.381
262	1328.0	0.186	0.330	0.379
263	1336.0	0.185	0.328	0.376
264	1344.0	0.184	0.326	0.374
265	1352.0	0.183	0.324	0.372
266	1360.0	0.182	0.322	0.370
267	1368.0	0.181	0.321	0.368
268	1376.0	0.180	0.319	0.365
269	1384.0	0.179	0.317	0.363
270	1392.0	0.178	0.315	0.361
271	1400.0	0.177	0.313	0.359
272	1400.0	0.177	0.313	0.359

25725	647D		0.393
25926	6546	28	0.396
26118	6606		0.399
26310	66C6		0.401
26493	677D		0.404
26685	683D		0.407
26886	6906	29	0.410
27079	69C7		0.413
27271	6A87		0.416
27453	6B3D		0.419
27645	6BFD		0.422
27847	6CC7	30	0.425
28039	6D87		0.428
28231	6E47		0.431
28413	6EFD		0.434
28605	6FBD		0.436
28807	7087	31	0.440
28999	7147		0.442
29191	7207		0.445
29373	72BD		0.448
29566	737E		0.451
29767	7447	32	0.454
29959	7507		0.457
30151	75C7		0.460
30334	767E		0.463
30526	773E		0.466
30727	7807	33	0.469
30919	78C7		0.472
31111	7987		0.475
31294	7A3E		0.478
31486	7AFE		0.480
31688	7BC8	34	0.484
31880	7C88		0.486
32072	7D48		0.489
32254	7DFE		0.492
32446	7EBE		0.495
32648	7F88	35	0.498
32840	8048		0.501
33032	8108		0.504
33214	81BE		0.507
33406	827E		0.510
33608	8348	36	0.513
33800	8408		0.516
33992	84C8		0.519
34175	857F		0.521
34367	863F		0.524
34568	8708	37	0.527
34760	87C8		0.530
34952	8888		0.533
35135	893F		0.536
35327	89FF		0.539
35529	8AC9	38	0.542
35721	8B89		0.545
35913	8C49		0.548
36095	8CFF		0.551
36287	8DBF		0.554
36489	8E89	39	0.557
36681	8F49		0.560
36873	9009		0.563
37055	90BF		0.565
37247	917F		0.568
37449	9249	40	0.571
37819	93BB		0.577
38189	952D		0.583
38558	969E	41	0.588
38928	9810		0.594
39297	9981	42	0.600
39667	9AF3		0.605
40036	9C64		0.611
40406	9DD6	43	0.617
40775	9F47		0.622
41145	A0B9	44	0.628
41515	A22B		0.633
41884	A39C		0.639
42254	A50E	45	0.645
42623	A67F		0.650
42993	A7F1	46	0.656
43362	A962		0.662
43732	AAD4		0.667
44101	AC45	47	0.673
44471	ADB7		0.679
44841	AF29	48	0.684
45211	B09B		0.690
45580	B20C		0.696
45949	B37D	49	0.701
46319	B4EF		0.707
46688	B660	50	0.712
47058	B7D2		0.718
47427	B943		0.724
47797	BAB5	51	0.729
48167	BC27		0.735
48536	BD98	52	0.741
48906	BF0A		0.746
49275	C07B		0.752
49645	C1ED	53	0.758
50014	C35E		0.763
50384	C4D0	54	0.769
50753	C641		0.774
51123	C7B3		0.780
51492	C924	55	0.786
51862	CA96		0.791
52232	CC08	56	0.797
52601	CD79		0.803
52971	CEEB		0.808
53340	D05C	57	0.814
53710	D1CE		0.820
54079	D33F	58	0.825
54449	D4B1		0.831
54818	D622		0.836
55188	D794	59	0.842
55558	D906		0.848
55927	DA77	60	0.853
56297	DBE9		0.859
56666	DD5A		0.865
57036	DECC	61	0.870
57405	E03D		0.876
57775	E1AF	62	0.882
57144	DF38		0.872
58514	E492		0.893
58884	E604	63	0.899
59253	E775		0.904
59623	E8E7	64	0.910
59992	EA58		0.915
60362	EBCA		0.921
60731	ED3B	65	0.927
61101	EEAD		0.932
61470	F01E	66	0.938
61840	F190		0.944
62210	F302		0.949
62579	F473	67	0.955
62949	F5E5		0.961
63318	F756	68	0.966
63688	F8C8		0.972
64057	FA39		0.977
64427	FBAB	69	0.983
64796	FD1C		0.989
65166	FE8E		0.994
65535	FFFF	70	1.000

Lens		Field of View			Digital ZOOM : x2.00			
					Pelco (SX800,801) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX800,801) Zoom control *
Motor Pulse	Focal Length	Vertical	Horizontal	Diagonal	CGI (SX800) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX800) : SetZoomControl GetZoomControl	
Steps	[mm]	[degree]			[DEC]	[HEX]	[DEC]	[DEC]
1	20.0	11.847	20.974	24.017	0	0	1	0.000
2	20.4	11.672	20.662	23.658	168	A8		0.003
3	20.8	11.496	20.349	23.300	336	150		0.005
4	21.2	11.321	20.038	22.942	496	1F0		0.008
5	21.6	11.146	19.727	22.586	664	298		0.010
6	22.0	10.972	19.418	22.231	840	348	2	0.013
7	22.4	10.799	19.110	21.878	1008	3F0		0.015
8	22.9	10.584	18.729	21.440	1176	498		0.018
9	23.3	10.414	18.426	21.093	1336	538		0.020
10	23.7	10.245	18.126	20.749	1504	5E0		0.023
11	24.2	10.036	17.755	20.323	1680	690	3	0.026
12	24.7	9.831	17.390	19.904	1848	738		0.028
13	25.1	9.669	17.102	19.574	2016	7E0		0.031
14	25.6	9.469	16.748	19.168	2176	880		0.033
15	26.1	9.274	16.401	18.769	2344	928		0.036
16	26.6	9.083	16.061	18.380	2521	9D9	4	0.038
17	27.1	8.897	15.730	18.001	2689	A81		0.041
18	27.6	8.715	15.409	17.632	2857	B29		0.044
19	28.1	8.539	15.097	17.274	3016	BC8		0.046
20	28.7	8.336	14.736	16.860	3184	C70		0.049
21	29.2	8.174	14.447	16.530	3361	D21	5	0.051
22	29.8	7.987	14.116	16.151	3529	DC9		0.054
23	30.3	7.839	13.854	15.850	3697	E71		0.056
24	30.9	7.671	13.556	15.509	3856	F10		0.059
25	31.5	7.512	13.275	15.187	4024	FB8		0.061
26	32.1	7.363	13.010	14.883	4201	1069	6	0.064
27	32.7	7.221	12.760	14.597	4369	1111		0.067
28	33.3	7.087	12.524	14.326	4537	11B9		0.069
29	34.0	6.941	12.264	14.030	4697	1259		0.072
30	34.6	6.822	12.055	13.790	4865	1301		0.074
31	35.3	6.692	11.824	13.527	5041	13B1	7	0.077
32	36.0	6.569	11.607	13.279	5209	1459		0.079
33	36.7	6.452	11.402	13.044	5377	1501		0.082
34	37.4	6.341	11.207	12.821	5537	15A1		0.084
35	38.1	6.236	11.020	12.608	5705	1649		0.087
36	38.8	6.134	10.841	12.403	5881	16F9	8	0.090
37	39.5	6.035	10.667	12.204	6049	17A1		0.092
38	40.3	5.925	10.473	11.983	6217	1849		0.095
39	41.0	5.831	10.307	11.793	6377	18E9		0.097
40	41.8	5.726	10.121	11.580	6545	1991		0.100
41	42.6	5.622	9.939	11.372	6721	1A41	9	0.103
42	43.4	5.521	9.760	11.168	6889	1AE9		0.105
43	44.3	5.411	9.565	10.945	7058	1B92		0.108
44	45.1	5.315	9.396	10.752	7217	1C31		0.110
45	46.0	5.211	9.212	10.540	7385	1CD9		0.113
46	46.9	5.109	9.033	10.336	7562	1D8A	10	0.115
47	47.8	5.012	8.860	10.138	7730	1E32		0.118
48	48.7	4.917	8.693	9.947	7898	1EDA		0.121
49	49.6	4.826	8.532	9.763	8057	1F79		0.123
50	50.5	4.739	8.378	9.587	8225	2021		0.126
51	51.5	4.646	8.213	9.399	8402	20D2	11	0.128
52	52.5	4.557	8.056	9.219	8570	217A		0.131
53	53.5	4.472	7.906	9.047	8738	2222		0.133
54	54.5	4.390	7.762	8.882	8898	22C2		0.136
55	55.5	4.312	7.624	8.725	9066	236A		0.138
56	56.6	4.230	7.479	8.558	9242	241A	12	0.141
57	57.7	4.151	7.339	8.398	9410	24C2		0.144
58	58.8	4.075	7.205	8.245	9578	256A		0.146
59	59.9	4.001	7.075	8.097	9738	260A		0.149
60	61.0	3.930	6.950	7.954	9906	26B2		0.151
61	62.2	3.856	6.818	7.803	10082	2762	13	0.154
62	63.4	3.784	6.691	7.658	10250	280A		0.156
63	64.6	3.714	6.568	7.517	10418	28B2		0.159
64	65.8	3.647	6.450	7.382	10578	2952		0.161
65	67.1	3.577	6.326	7.241	10746	29FA		0.164
66	68.4	3.510	6.208	7.105	10922	2AAA	14	0.167
67	69.7	3.445	6.093	6.974	11090	2B52		0.169
68	71.0	3.383	5.983	6.848	11258	2BFA		0.172
69	72.4	3.318	5.869	6.717	11418	2C9A		0.174
70	73.8	3.256	5.759	6.592	11586	2D42		0.177
71	75.2	3.197	5.654	6.471	11763	2DF3	15	0.179
72	76.6	3.139	5.552	6.355	11931	2E9B		0.182
73	78.1	3.080	5.447	6.235	12099	2F43		0.185
74	79.6	3.023	5.346	6.119	12258	2FE2		0.187
75	81.1	2.968	5.249	6.008	12426	308A		0.190
76	82.7	2.911	5.149	5.893	12603	313B	16	0.192
77	84.3	2.856	5.053	5.783	12771	31E3		0.195
78	85.9	2.804	4.960	5.677	12939	328B		0.197
79	87.5	2.753	4.870	5.574	13098	332A		0.200
80	89.2	2.701	4.778	5.469	13266	33D2		0.202
81	90.9	2.651	4.690	5.368	13443	3483	17	0.205
82	92.6	2.603	4.605	5.271	13611	352B		0.208
83	94.4	2.554	4.518	5.171	13779	35D3		0.210
84	96.2	2.507	4.434	5.075	13939	3673		0.213
85	98.0	2.461	4.353	4.983	14107	371B		0.215
86	99.9	2.415	4.271	4.889	14283	37CB	18	0.218
87	101.8	2.370	4.192	4.799	14451	3873		0.221
88	103.7	2.327	4.116	4.712	14619	391B		0.223
89	105.7	2.283	4.039	4.624	14779	39BB		0.226
90	107.7	2.241	3.965	4.539	14947	3A63		0.228
91	109.8	2.199	3.890	4.453	15123	3B13	19	0.231
92	111.9	2.158	3.818	4.371	15291	3BBB		0.233
93	114.0	2.119	3.749	4.291	15459	3C63		0.236
94	116.2	2.079	3.679	4.211	15619	3D03		0.238
95	118.4	2.041	3.611	4.134	15787	3DAB		0.241
96	120.7	2.003	3.543	4.056	15963	3E5B	20	0.244
97	123.0	1.966	3.477	3.981	16131	3F03		0.246
98	125.3	1.930	3.414	3.908	16299	3FAB		0.249
99	127.7	1.894	3.350	3.835	16459	404B		0.251
100	130.1	1.859	3.289	3.765	16627	40F3		0.254
101	132.6	1.824	3.227	3.694	16804	41A4	21	0.256
102	135.1	1.791	3.168	3.627	16972	424C		0.259
103	137.7	1.757	3.109	3.559	17140	42F4		0.262
104	140.4	1.724	3.050	3.492	17299	4393		0.264
105	143.1	1.692	2.993	3.427	17467	443B		0.267
106	145.8	1.661	2.939	3.364	17644	44EC	22	0.269
107	148.6	1.630	2.884	3.302	17812	4594		0.272
108	151.4	1.601	2.832	3.242	17980	463C		0.274
109	154.3	1.571	2.779	3.182	18139	46DB		0.277
110	157.3	1.541	2.727	3.122	18308	4784		0.279
111	160.3	1.513	2.677	3.064	18484	4834	23	0.282
112	163.4	1.485	2.626	3.007	18652	48DC		0.285
113	166.5	1.457	2.578	2.951	18820	4984		0.287
114	169.7	1.430	2.530	2.896	18980	4A24		0.290
115	172.9	1.404	2.484	2.843	19148	4ACC		0.292
116	176.2	1.378	2.438	2.790	19324	4B7C	24	0.295
117	179.5	1.353	2.393	2.739	19492	4C24		0.297
118	183.0	1.327	2.348	2.687	19660	4CCC		0.300
119	186.4	1.303	2.305	2.639	19820	4D6C		0.302
120	190.0	1.278	2.262	2.589	19988	4E14		0.305
121	193.6	1.255	2.220	2.541	20164	4EC4	25	0.308
122	197.3	1.231	2.179	2.494	20332	4F6C		0.310
123	201.1	1.209	2.138	2.448	20500	5014		0.313
124	205.0	1.186	2.098	2.402	20660	50B4		0.315
125	208.9	1.164	2.060	2.358	20828	515C		0.318
126	212.9	1.143	2.022	2.314	21004	520C	26	0.321
127	217.0	1.121	1.984	2.271	21173	52B5		0.323
128	221.1	1.101	1.948	2.230	21341	535D		0.326
129	225.3	1.080	1.912	2.188	21500	53FC		0.328
130	229.6	1.060	1.876	2.148	21668	54A4		0.331
131	234.0	1.041	1.841	2.108	21845	5555	27	0.333
132	238.5	1.021	1.807	2.068	22013	55FD		0.336
133	243.0	1.002	1.774	2.030	22181	56A5		0.338
134	247.7	0.984	1.740	1.992	22340	5744		0.341

135	252.4	0.966	1.708	1.956
136	257.2	0.948	1.677	1.920
137	262.1	0.930	1.646	1.884
138	267.1	0.913	1.615	1.849
139	272.2	0.896	1.585	1.815
140	277.4	0.879	1.556	1.781
141	282.7	0.863	1.527	1.748
142	288.1	0.847	1.499	1.716
143	293.6	0.831	1.471	1.684
144	299.2	0.816	1.444	1.653
145	304.9	0.801	1.417	1.622
146	310.7	0.786	1.391	1.592
147	316.6	0.772	1.365	1.563
148	322.7	0.757	1.339	1.533
149	328.8	0.743	1.315	1.505
150	335.1	0.729	1.290	1.477
151	341.5	0.716	1.266	1.450
152	348.0	0.703	1.243	1.423
153	354.7	0.689	1.220	1.396
154	361.4	0.677	1.197	1.371
155	368.4	0.664	1.175	1.345
156	375.4	0.652	1.153	1.320
157	382.6	0.640	1.132	1.296
158	389.9	0.628	1.111	1.272
159	397.4	0.616	1.090	1.248
160	405.0	0.605	1.070	1.225
161	412.7	0.594	1.050	1.202
162	420.6	0.583	1.031	1.180
163	428.6	0.572	1.012	1.158
164	436.8	0.561	0.993	1.137
165	445.1	0.551	0.975	1.116
166	453.6	0.541	0.957	1.095
167	462.3	0.531	0.939	1.075
168	471.1	0.521	0.921	1.055
169	480.1	0.511	0.904	1.035
170	489.3	0.502	0.888	1.016
171	498.6	0.492	0.871	0.997
172	508.1	0.483	0.855	0.979
173	517.8	0.474	0.839	0.961
174	527.7	0.466	0.824	0.943
175	537.7	0.457	0.808	0.925
176	548.0	0.448	0.793	0.908
177	558.5	0.440	0.779	0.891
178	569.1	0.432	0.764	0.875
179	580.0	0.424	0.750	0.859
180	591.1	0.416	0.736	0.843
181	602.4	0.408	0.722	0.827
182	613.9	0.401	0.709	0.812
183	625.6	0.393	0.696	0.797
184	637.6	0.386	0.683	0.782
185	649.7	0.379	0.670	0.767
186	662.1	0.372	0.658	0.753
187	674.7	0.365	0.646	0.739
188	687.6	0.358	0.634	0.725
189	700.7	0.352	0.622	0.712
190	714.1	0.345	0.610	0.699
191	727.8	0.339	0.599	0.686
192	741.8	0.332	0.588	0.673
193	756.1	0.326	0.577	0.661
194	770.7	0.320	0.566	0.648
195	785.3	0.314	0.556	0.636
196	800.0	0.308	0.546	0.624
197	808.0	0.305	0.540	0.618
198	816.0	0.302	0.535	0.612
199	824.0	0.299	0.530	0.607
200	832.0	0.297	0.525	0.601
201	840.0	0.294	0.520	0.595
202	848.0	0.291	0.515	0.590
203	856.0	0.288	0.510	0.584
204	864.0	0.286	0.506	0.579
205	872.0	0.283	0.501	0.574
206	880.0	0.281	0.497	0.569
207	888.0	0.278	0.492	0.564
208	896.0	0.276	0.488	0.559
209	904.0	0.273	0.484	0.554
210	912.0	0.271	0.479	0.549
211	920.0	0.268	0.475	0.544
212	928.0	0.266	0.471	0.540
213	936.0	0.264	0.467	0.535
214	944.0	0.262	0.463	0.531
215	952.0	0.259	0.459	0.526
216	960.0	0.257	0.456	0.522
217	968.0	0.255	0.452	0.518
218	976.0	0.253	0.448	0.513
219	984.0	0.251	0.445	0.509
220	992.0	0.249	0.441	0.505
221	1,000.0	0.247	0.438	0.501
222	1,008.0	0.245	0.434	0.497
223	1016.0	0.243	0.431	0.494
224	1024.0	0.241	0.427	0.490
225	1032.0	0.239	0.424	0.486
226	1040.0	0.238	0.421	0.482
227	1048.0	0.236	0.418	0.479
228	1056.0	0.234	0.415	0.475
229	1064.0	0.232	0.412	0.472
230	1072.0	0.230	0.408	0.468
231	1080.0	0.229	0.405	0.465
232	1088.0	0.227	0.403	0.461
233	1096.0	0.225	0.400	0.458
234	1104.0	0.224	0.397	0.455
235	1112.0	0.222	0.394	0.451
236	1120.0	0.221	0.391	0.448
237	1128.0	0.219	0.388	0.445
238	1136.0	0.217	0.386	0.442
239	1144.0	0.216	0.383	0.439
240	1152.0	0.214	0.380	0.436
241	1160.0	0.213	0.378	0.433
242	1168.0	0.212	0.375	0.430
243	1176.0	0.210	0.373	0.427
244	1184.0	0.209	0.370	0.424
245	1192.0	0.207	0.368	0.421
246	1200.0	0.206	0.365	0.419
247	1208.0	0.205	0.363	0.416
248	1216.0	0.203	0.360	0.413
249	1224.0	0.202	0.358	0.410
250	1232.0	0.201	0.356	0.408
251	1240.0	0.199	0.353	0.405
252	1248.0	0.198	0.351	0.403
253	1256.0	0.197	0.349	0.400
254	1264.0	0.196	0.347	0.398
255	1272.0	0.194	0.345	0.395
256	1280.0	0.193	0.343	0.393
257	1288.0	0.192	0.340	0.390
258	1296.0	0.191	0.338	0.388
259	1304.0	0.190	0.336	0.385
260	1312.0	0.188	0.334	0.383
261	1320.0	0.187	0.332	0.381
262	1328.0	0.186	0.330	0.379
263	1336.0	0.185	0.328	0.376
264	1344.0	0.184	0.326	0.374
265	1352.0	0.183	0.324	0.372
266	1360.0	0.182	0.322	0.370
267	1368.0	0.181	0.321	0.368
268	1376.0	0.180	0.319	0.365
269	1384.0	0.179	0.317	0.363
270	1392.0	0.178	0.315	0.361
271	1400.0	0.177	0.313	0.359
272	1408.0	0.176	0.312	0.357
273	1416.0	0.175	0.310	0.355
274	1424.0	0.174	0.308	0.353
275	1432.0	0.173	0.306	0.351
276	1440.0	0.172	0.305	0.349
277	1448.0	0.171	0.303	0.347
278	1456.0	0.170	0.301	0.345
279	1464.0	0.169	0.300	0.344
280	1472.0	0.168	0.298	0.342
281	1480.0	0.167	0.296	0.340

22508	57EC		0.343
22685	589D	28	0.346
22853	5945		0.349
23021	59ED		0.351
23181	5A8D		0.354
23349	5B35		0.356
23525	5BE5	29	0.359
23693	5C8D		0.362
23861	5D35		0.364
24021	5DD5		0.367
24189	5E7D		0.369
24365	5F2D	30	0.372
24533	5FD5		0.374
24701	607D		0.377
24861	611D		0.379
25029	61C5		0.382
25205	6275	31	0.385
25373	631D		0.387
25541	63C5		0.390
25701	6465		0.392
25869	650D		0.395
26046	65BE	32	0.397
26214	6666		0.400
26382	670E		0.403
26541	67AD		0.405
26709	6855		0.408
26886	6906	33	0.410
27054	69AE		0.413
27222	6A56		0.415
27381	6AF5		0.418
27549	6B9D		0.420
27726	6C4E	34	0.423
27894	6CF6		0.426
28062	6D9E		0.428
28222	6E3E		0.431
28390	6EE6		0.433
28566	6F96	35	0.436
28734	703E		0.438
28902	70E6		0.441
29062	7186		0.443
29230	722E		0.446
29406	72DE	36	0.449
29574	7386		0.451
29742	742E		0.454
29902	74CE		0.456
30070	7576		0.459
30246	7626	37	0.462
30414	76CE		0.464
30583	7777		0.467
30742	7816		0.469
30910	78BE		0.472
31087	796F	38	0.474
31255	7A17		0.477
31423	7ABF		0.479
31582	7B5E		0.482
31750	7C06		0.484
31927	7CB7	39	0.487
32095	7D5F		0.490
32263	7E07		0.492
32423	7EA7		0.495
32591	7F4F		0.497
32767	7FFF	40	0.500
33092	8144		0.505
33416	8288		0.510
33741	83CD	41	0.515
34065	8511		0.520
34390	8656	42	0.525
34714	879A		0.530
35039	88DF		0.535
35363	8A23	43	0.540
35687	8B67		0.545
36012	8CAC	44	0.550
36336	8DF0		0.554
36661	8F35		0.559
36985	9079	45	0.564
37310	91BE		0.569
37634	9302	46	0.574
37958	9446		0.579
38283	958B		0.584
38607	96CF	47	0.589
38932	9814		0.594
39256	9958	48	0.599
39581	9A9D		0.604
39905	9BE1		0.609
40230	9D26	49	0.614
40554	9E6A		0.619
40878	9FAE	50	0.624
41203	A0F3		0.629
41527	A237		0.634
41852	A37C	51	0.639
42176	A4C0		0.644
42501	A605	52	0.649
42825	A749		0.653
43149	A88D		0.658
43474	A9D2	53	0.663
43798	AB16		0.668
44123	AC5B	54	0.673
44447	AD9F		0.678
44772	AEE4		0.683
45096	B028	55	0.688
45420	B16C		0.693
45745	B2B1	56	0.698
46069	B3F5		0.703
46394	B53A		0.708
46718	B67E	57	0.713
47043	B7C3		0.718
47367	B907	58	0.723
47692	BA4C		0.728
48016	BB90		0.733
48340	BCD4	59	0.738
48665	BE19		0.743
48989	BF5D	60	0.748
49314	C0A2		0.752
49638	C1E6		0.757
49963	C32B	61	0.762
50287	C46F		0.767
50611	C5B3	62	0.772
50936	C6F8		0.777
51260	C83C		0.782
51585	C981	63	0.787
51909	CAC5		0.792
52234	CC0A	64	0.797
52558	CD4E		0.802
52883	CE93		0.807
53207	CFD7	65	0.812
53531	D11B		0.817
53856	D260	66	0.822
54180	D3A4		0.827
54505	D4E9		0.832
54829	D62D	67	0.837
55154	D772		0.842
55478	D8B6	68	0.847
55802	D9FA		0.851
56127	DB3F		0.856
56451	DC83	69	0.861
56776	DDC8		0.866
57100	DF0C	70	0.871
57425	E051		0.876
57749	E195		0.881
58073	E2D9	71	0.886
58398	E41E		0.891
58722	E562	72	0.896
59047	E6A7		0.901
59371	E7EB		0.906
59696	E930	73	0.911
60020	EA74		0.916
60345	EBB9	74	0.921

282	1488.0	0.166	0.295	0.338
283	1496.0	0.165	0.293	0.336
284	1504.0	0.164	0.292	0.335
285	1512.0	0.163	0.290	0.333
286	1520.0	0.163	0.289	0.331
287	1528.0	0.162	0.287	0.329
288	1536.0	0.161	0.286	0.328
289	1544.0	0.160	0.284	0.326
290	1552.0	0.159	0.283	0.324
291	1560.0	0.158	0.281	0.323
292	1568.0	0.158	0.280	0.321
293	1576.0	0.157	0.278	0.319
294	1584.0	0.156	0.277	0.318
295	1592.0	0.155	0.276	0.316
296	1600.0	0.155	0.274	0.315
297	1600.0	0.155	0.274	0.315

60669	ECFD		0.926
60993	EE41		0.931
61318	EF86	75	0.936
61642	F0CA		0.941
61967	F20F	76	0.946
62291	F353		0.950
62616	F498		0.955
62940	F5DC	77	0.960
63264	F720		0.965
63589	F865	78	0.970
63913	F9A9		0.975
64238	FAEE		0.980
64562	FC32	79	0.985
64887	FD77		0.990
65211	FEBB		0.995
65535	FFFF	80	1.000

Appendix 2. Table of FOCUS Position vs Subject distance for SX800/801 FW Ver.2.10 and later

1. Precision Control Commands

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

Digital Zoom OFF

Focal Length	mm	20	32	51	82	132	212	341	548	800
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 ON

Focal Length	mm	20	32	51	82	132	212	341	548	800	1000	1200	1400	1600
Zoom Position 1.00	HEX	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF				
Zoom Position 1.25	HEX	0000	1A42	3483	4EC5	6906	8348	9D89	B7CB	CCCC	FFFF			
Zoom Position 1.5	HEX	0000	15E1	2BC3	41A4	5785	6D66	8348	9929	AAAA	D47F	FFFF		
Zoom Position 1.75	HEX	0000	12C1	2582	3843	4B05	5DC6	7087	8348	9249	B660	DA77	FFFF	
Zoom Position 2.0	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.

2. Rough Control Commands

Corresponding commands	SX800	SX801	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 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