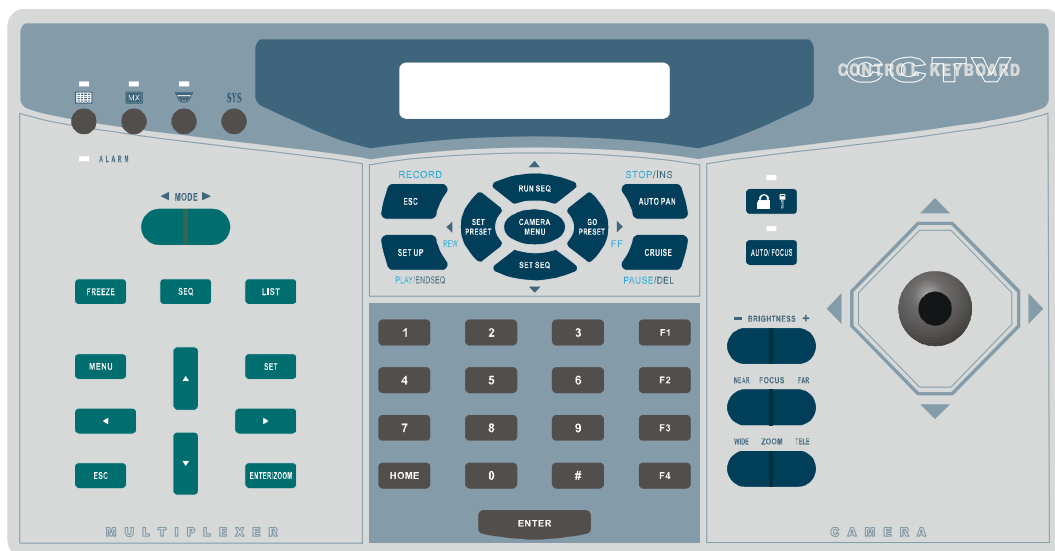


User's Manual

SYSTEM CONTROL KEYBOARD



STANDARD MODEL
Version 3.4

Before attempting to connect or operate this product, please read these instructions completely.

00-37313-0ED2

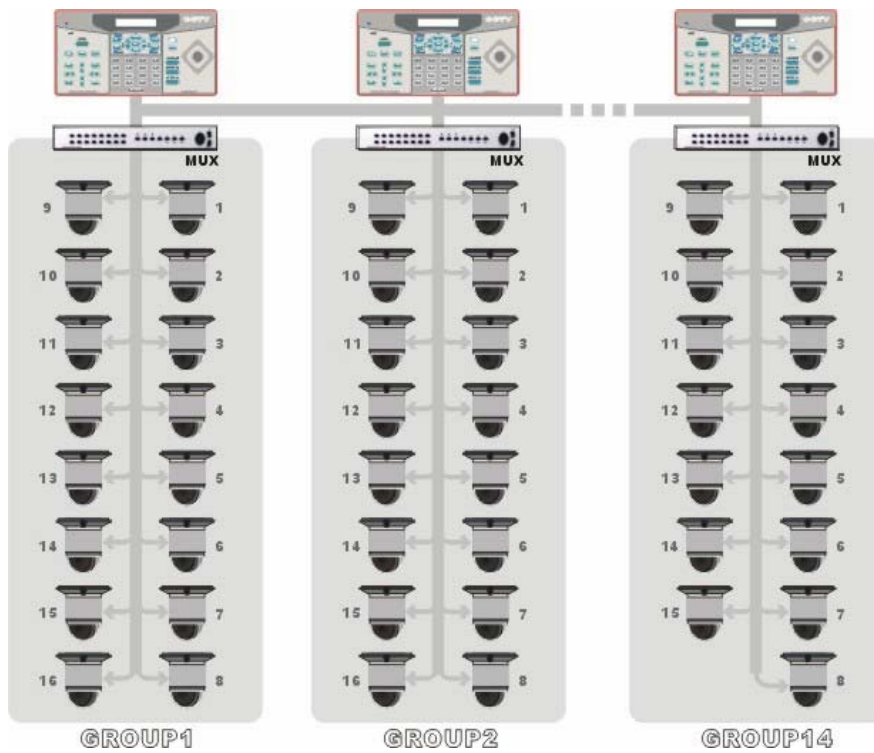
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1.PREFACE

This control keyboard is integrated with our full range CCTV products. User can control our Triplex Multiplexer, High Speed Dome Camera and other CCTV devices easily. Multi-protocols function allows user to integrate our products into existed systems of the other brands. Built in firmware upgrade circuits allows user to upgrade the firmware through RS-232 port easily.



2.FEATURES

FEATURES

1. CCTV devices control.
2. Joystick control of PTZ functions.
3. Preset position and pattern control.
4. Friendly user interface through LCD display.
5. Firmware upgrade is available from RS-232 port.
6. Rubber keypad is easier to input commands.
7. Remote control via RS-485 interface.
8. Dome cameras, Multiplexers, P/T/Z receivers and All in one cameras can be controlled through this keyboard.
9. Maximum 255 devices can be controlled. (223 Dome Cameras or Receivers, 16 System Keyboards, 16 Multiplexers and one video Matrix.) (N/A for D7312)
10. Built-in clock for date and time recording (N/A for D7312)
11. Built-in clock synchronization function for 485 devices (N/A for D7312)
12. Optional 3-axis joystick
13. Built in P&D protocols of PELCO (Pelco Corporation).
14. Built in DSCP protocol

* **PELCO** is a registered trademark of **PELCO** corporation.

* **P protocol** and **D protocol** are protocols what **PELCO** corporation used.

3. PRECAUTIONS

1. Do not expose the product to rain or moisture

To prevent fire or electric shock, do not expose the product to rain or moisture.

2. Do not disassemble this product

To prevent the risk of electric shock, do not open it by yourself, please.

3. Clean the equipment carefully.

Dry cloth is recommended for cleaning.



The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the products



The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that maybe of sufficient magnitude to constitute a risk of electric shock to persons.

NOTE

This equipment generates and radiates radio frequency energy. It may cause harmful interference to radio communication if it is not installed and used in accordance with the instruction manual. This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to subpart J of part 15 of FCC rules which are designed to provide reasonable protection against harmful interference when operated in a commercial environment. This equipment has also been tested and found to comply with the requirements for a CE Class A device safety standards.

4. QUICK STARTING

This section is a reference for users to quick start to manipulate dome cameras or multiplexers in a short time.

QUICK START - DOME CAMERA CONTROL

D7313

Press <Camera Selection Key> and input the number of dome camera what you want to control it. Please remember to press <ENTER> key to confirm your input. User will be able to P/T/Z the dome camera through joystick now.

D7312

The keyboard will scan RS-485 bus to ensure how many devices are connected to the bus when power on. Press number key to select a dome camera what you want to control it directly. Please remember to press <ENTER> key to confirm your input.

QUICK START – MULTIPLEXER CONTROL

D7313

Press <Multiplexer Selection Key> and input the ID of multiplexer what you want to control it. Please remember to press <ENTER> key to confirm your input. User will be able to control the function of multiplexer through keyboard now.

D7312

D7312 can only control one Multiplexer. The default Multiplexer ID is 224. User can control Multiplexer directly through the keypad of Multiplexer region.

QUICK START – SYSTEM SETTING

D7313

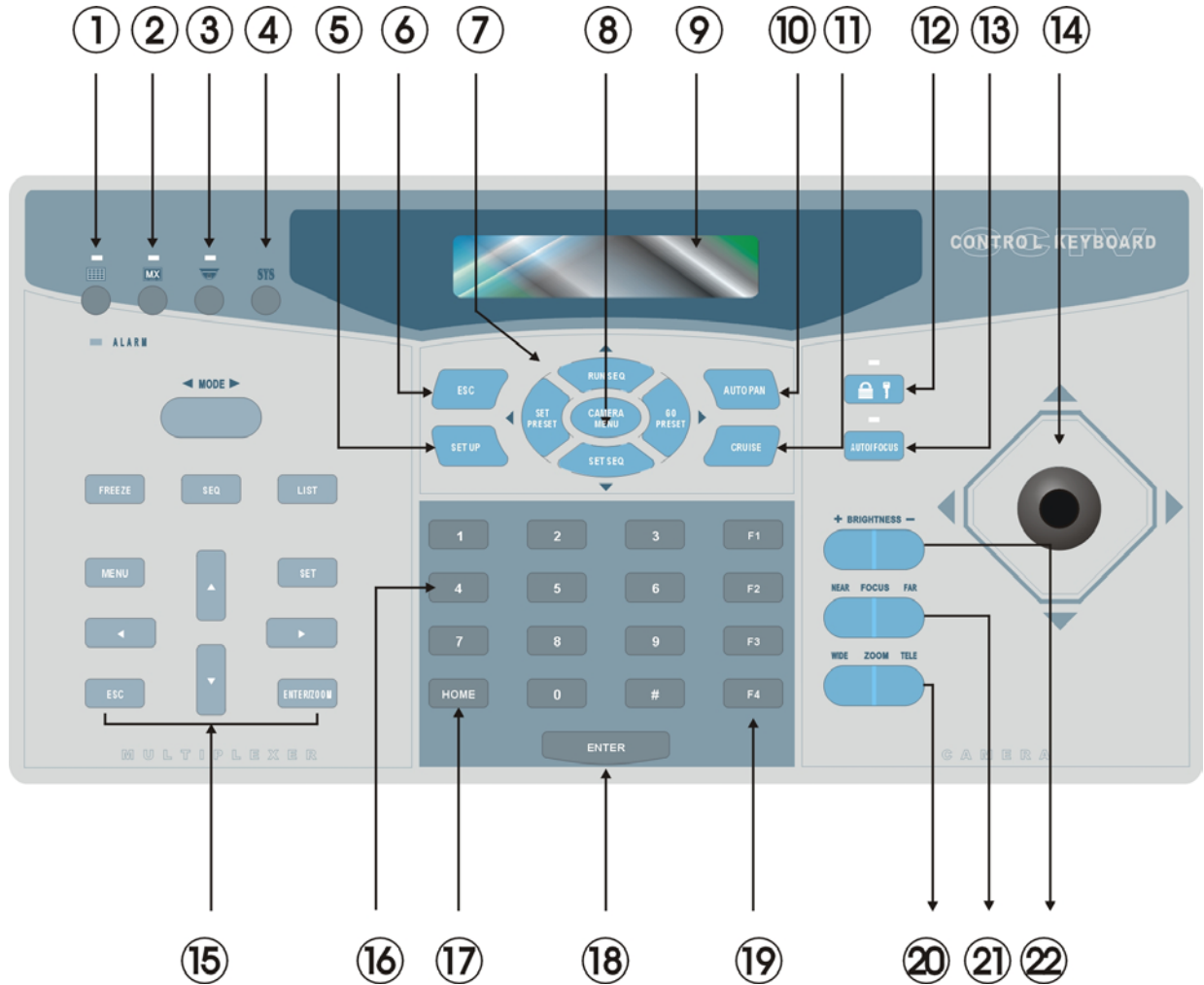
Press <CCTV System Setup Key> to modify the system setting. Please input a correct password to enter this mode.

D7312

Press <CCTV System Setup Key> to modify the system setting. Please input a correct password to enter this mode.

5.CONSTRUCTION

FRONT PANEL – D7313



1. Mode : Multiplexer Selection Key
Press this button to select a 'Multiplexer' to control its function.
2. Mode : Matrix Selection Key (Reserved)
3. Mode : Camera/Dome Selection Key
Press this button to select a 'Dome Camera' to control its function.
4. Mode : CCTV System Setup Key
Press this button to modify system setting of keyboard.
5. Camera Setup Key
6. ESC Key
7. Direction Keys and Camera Function Keys

8. Camera OSD Menu key / Enter key

Press this key for 3 seconds and the OSD menu will be opened if the keyboard is getting control of dome camera. Its function will be the same as 'ENTER' if user press it and does not keep 3 seconds above.

9. LCD Panel

Interactive message will be displayed on this LCD panel

10. Auto-Pan Function Key

11. Cruise Function Key

12. Keyboard Lock Up Key

Press this button for 3 seconds to lock/unlock the keyboard

13. Auto-Focus Key

14. Joystick

15. Multiplexer or Matrix Control Keys

16. Number Keys

17. Home Key

18. ENTER Key

19. Special Function keys.

'F1' is remote-reset function.

'F2' is lock/unlock device function.

'F3' is reserved currently.

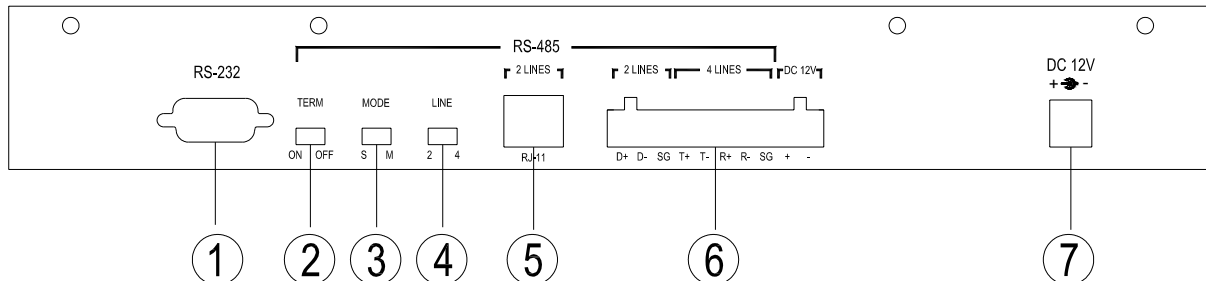
'F4' is Dome speed test function.

20. Zoom Wide/Tele Keys

21. Focus Near/Far Keys

22. Brightness Up/Down Keys

REAR PANEL



1. RS-232 D-SUB

User is allowed to upgrade the firmware of keyboard through this port.

2. Termination Switch (TERM ON/OFF) - Default is **OFF**

This switch is used to terminate the connected RS-485 communication line. It should be kept in the OFF position normally.

3. Mode Switch (SLAVE/MASTER) - Default is **MASTER**

User can set this keyboard as a master station or slave station. User should set a second keyboard as SLAVE station if he added this additional keyboard into existed RS-485 bus.

4. Line Selection Switch (LINE 4/2) – Default is **2 LINES**

This switch is used to select full-duplex (4-lines) or half-duplex (2-lines) for the communication lines.

5. RJ-11 Jack

This jack is a quick connection jack for demo purpose. It only support half-duplex communication.

6. Terminal Blocks

User should connect RS-485 communication lines through this connector. We offer additional power input positions on this connector.

7. Power Jack

Please supply power to keyboard through this power jack.

6.INSTALLATION

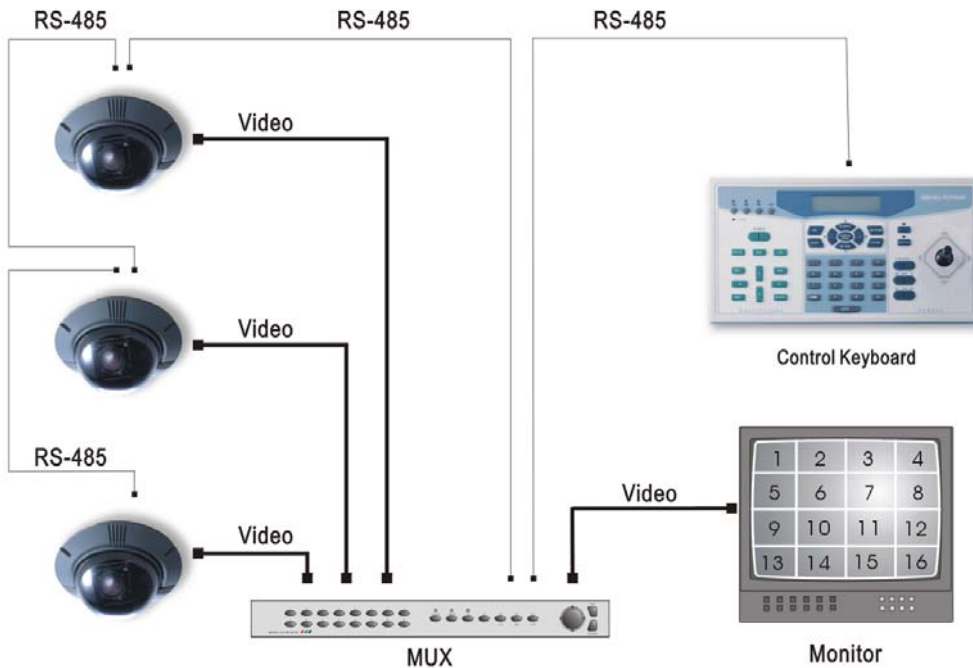
RS-485 CABLE

The communication interface between dome camera and keyboard is RS-485. Maximum cable length for RS-485 communication over 24-gauge wire is 4000 feet (1200 meters) without repeater. Shielded twisted pairs are recommended.

'CAT 5' cable is a recommended type of cable for installation. Terminal block is also a recommended connector for long distance connection. 'RJ-11' jack is suitable for testing and demo.

Please reference "Appendix RS485" for detailed pin definition.

SYSTEM CONNECTION



7. OPERATION - COMMON

POWER ON

Please follow the following steps to power up all devices.

STEP1: Connect all devices.

STEP2: Power up all devices except for the keyboard.

STEP3: Power up keyboard.

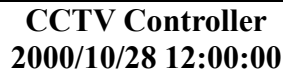
The LCD of keyboard will display the following message first.



CCTV Controller
Version x.xx

Fig.7.1.1

Keyboard will go into 'Stand By Mode' and display following message later.



CCTV Controller
2000/10/28 12:00:00

Fig.7.1.2



Note :

D7313 keyboard doesn't require users follow above steps to start to control devices. But D7312 keyboard require users follow above steps to start to control devices. The major difference is D7312 will scan RS-485 bus to find how many devices are connected to this RS-485 bus. User is required to re-scan devices if they do not follow the above steps to power up D7312 keyboard.

Re-scan procedure is described on "OPREATION SYSTEM SETTING" section. Please use "system linking" function to re-scan the devices on RS-485 bus.

■ STANDBY MODE DEFINITION

User will be able to do following actions under 'Standby Mode'.

1. User is allowed to enter "CCTV System Setting Mode" by pressing <SYS> key.
2. User is allowed to enter "Camera Control Mode" by pressing <Camera Selection key>  (N/A for D7312).
3. User is allowed to enter "Multiplexer Control Mode" by pressing <Multiplexer Selection key>  (N/A for D7312)
4. User is allowed to enter "Matrix Control Mode" by pressing <Matrix Selection Key> 'MX' (N/A for D7312)

8. OPERATION - SYSTEM SETTING

Keyboard will enter '**CCTV System Setting Mode**' when user press the <SYS> key and enter a correct password (default password is 0000). Detailed operation will be described in the following sections. Please use "▲" and "▼" keys to scroll these setup items.

1.0 System Setting
Enter password []

Fig.8.0.1

8.1 System Linking

Item 1.1 allows user to scan connected cameras on the RS485 bus again. Please press "◀" or "▶" button to start a new scanning session.

1.1 System Linking
Press ◀ ▶ to search

Fig.8.1.1

8.2 Keyboard ID Assignment

Item 1.2 allows you to assign a new ID for this keyboard. Please press "◀" or "▶" button to change the ID number. Default ID number for keyboard is 000. Please assign different ID for different keyboard if more than one keyboard is connected to one RS-485 bus.

1.2 Set Keyboard ID
(0 or 240-254):000

Fig.8.2.1

8.3 System Monitor Setting

A monitor is required to manipulate this keyboard at normal condition. There are four sources are available to be selected. The first one is the output of Multiplexer's main monitor, the second is the output of Matrix, the third is SuperMPX mode and the last is SuperMMX mode.

After user select 'Item a' (Fig.8.3.1), the video image of camera will be outputted to the main monitor of Multiplexer. In the same words, the video image will be outputted to the monitor of Matrix after user select 'Item b' (Fig.8.3.2). Press 'ESC' to exit this

mode directly. Please reference to “Appendix SuperMPX and Super MMX” for detailed instructions.

**1.3 System Monitor
a.MPX main monitor**

Fig.8.3.1

**1.3 System Monitor
b.Matrix output**

Fig.8.3.2

**1.3 System Monitor
c.SuperMPX mode**

Fig.8.3.3

**1.3 System Monitor
d.SuperMMX mode**

Fig.8.3.4

**1.3.b Matrix output
Monitor No.: [xxx]**

Fig.8.3.5

8.4 RS-232 Baud Rate Setting

Item 1.4 (as Fig.8.4.1) allows user to change the baud rate of RS232 interface. The default setting is “9600bps, 8,N,1”. User can assign a new baud rate for RS232 port through "◀" / "▶" button. Press <ESC> to exit this mode.

**1.4 RS232 Baudrate
a.Buadrate 9600bps**

Fig.8.4.1

**1.4 RS232 Baudrate
b.Buadrate 4800bps**

Fig.8.4.2

**1.4 RS232 Baudrate
c.Buadrate 2400bps**

Fig.8.4.3

8.5 Date Setting

Item 1.5(as Fig.8.5.1) allows user to set a new date into keyboard. Please press "◀"/"▶" button to select a column (year, month and date) what you want to modify. Input new numbers directly. Press <ESC> button exit this mode.

1.5 Date setting
Press ENTER to setup

Fig.8.5.1

1.5.1 Date setting
Yr:xx Mon:xx Day:xx

Fig.8.5.2

8.6 Time Setting

Item 1.6(as Fig.8.6.1) allows user to set a new time into keyboard. Please press "◀"/"▶" button to select a column (hour, minute and second) what you want to modify. Input new numbers directly. Press <ESC> to exit this mode.

1.6 Time setting
Press ENTER to setup

Fig.8.6.1

1.6.1 Time setting
HH:xx MM:xx SS:xx

Fig.8.6.2

8.7 System Date/Time Correction

Item 1.7(as Fig.8.7.1) allows user to synchronize the local time to all devices. Keyboard will synchronize the time of all devices to the time of keyboard. Press <ESC> to exit this mode.

1.7 Date Time Correct
Press ENTER to setup

Fig.8.7.1

1.7 Date Time Correct
Send to all devices?

Fig.8.7.2

8.8 System Alarm List

Item 1.8(as Fig.8.8.1) allows user to list the latest 10 Alarm information came from system bus.

1.8 Alarm list
Press ENTER to view

Fig.8.8.1

x.00/00/00 00:00:00
Alarm camera ID:xxx

Fig.8.8.2

8.9 Camera Type & Class

Item 1.9 (as Fig.8.9.1) allows users to assign proper individual protocol for every camera and assign class to keyboard. Press <1> to start to assign individual protocol to every camera. Press ◀ or ▶ key to change the setting, ▲ or ▼ key to choose different camera.

| |
|--|
| 1.9 Camera Type & Class Press 1:Type 2:Class |
|--|

Fig.8.9.1

| |
|---|
| 1.9.1 Camera ID #001 [DSCP] Pelco-D Pelco-P |
|---|

Fig.8.9.2

Press <2> to start to assign class to keyboard. Press ▲ or ▼ key to choose the index of class and press <AUTOPAN> or <CRUISE> key to choose the class.

| |
|--|
| 1.9.2 Class1 Index01 Name:Class1 [001] |
|--|

Fig.8.9.3

8.10 Key Press Beep

Item 1.10(as Fig.8.10.1) allows user to turn on/off the built in buzzer. Buzzer will alert user after key is pressed when this setting is ON. Press ◀ or ▶ key to change the setting.

| |
|--|
| 1.10 Key Press Beep [OFF] ON |
|--|

Fig.8.10.1

8.11 Alarm Reaction

Item 1.11(as Fig.8.11.1) allows user to turn on/off the response action of keyboard when an alarm message is sent to keyboard from other devices

Basically, keyboard will receive an alarm message after the alarm port on dome camera is triggered. Keyboard can be programmed to do following actions after keyboard received an alarm message.

1. Buzzer beep.
2. Link to the dome camera which broadcast this alarm message.
3. Switch the video channel to full screen from multiplexer.

Default setting is OFF. Press '◀' or '▶' key to change the setting.

| |
|--|
| 1.11 Alarm Reaction [OFF] ON |
|--|

Fig.8.11.1

8.12 Password Setting

Item 1.12(as Fig.8.12.1) allows user to change the password of keyboard. User must input a new password twice correctly to confirm password change.

1.12.1 Password[**]**

Fig.8.12.1

1.12.2 Password[**]
Confirm []**

Fig.8.12.2

9.OPERATION - DOME CAMERA

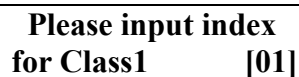
Press <Dome Camera Selection Key> to start to select a camera to control it under “Standby Mode”. Please input the ID of dome camera and press <ENTER> to confirm your input.



Camera Control
Enter Camera No:xxx

Fig.9.0.1

User is allowed to control different camera which located at different class. Please press <#> and a number key to select the class what your camera located at. Input your camera number to control it directly.



Please input index
for Class1 [01]

Fig.9.0.2

Keyboard will enter ‘**Camera Control Mode**’ after user selects a camera to control. User can full control the function of cameras now.



CAMERA CONTROL MODE
xxx P/T/Z/F/OSD Cam

Fig.9.0.3

The first row on LCD contains following information.

(P=Pan, T=Tilt, Z=Zoom, F=Focus, OSD=OSD available).

The second row on LCD allows user to input any number (1~255). It’s used to input a preset point or other parameters of camera. Detail operation instruction will be described in the following sections.

9.1 OSD CAMERA SETTING

Press **<CAMERA MENU>** button for 3 seconds to open the OSD menu of dome camera if the selected camera equipped the OSD function. User can move OSD bar through direction keys on keyboard after the OSD menu is opened.

9.2 JOYSTICK

Push joystick right/left/up/down to move dome camera directly.

9.3 PRESET FUNCTION OPERATION

User is allowed to control the built in preset function of dome camera under “Camera Control Mode”. Please follow the following instructions to manipulate this function.



Fig.9.3.1

■ Setting

Press a number key for preset point such as **<2>**. Press **<SET PRESET>** to record this position as preset point 2.

■ Recall preset position

Press a number key for preset point such as **<2>**. Press **<GO PRESET>** to go to the preset position 2.

9.4 SEQUENCE FUNCTION OPERATION

User is allowed to control the built in sequence function of dome camera under ‘Camera Control Mode’. There are 4 sets of sequence line can be programmed into dome cameras. Please follow the following instructions to manipulate this function.

■ Setting

1. Press a number key to set a sequence line such as **<1>**. Press **<SET SEQ.>** to start to modify parameters of sequence 1.

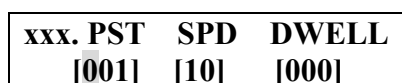


Fig.9.4.1

※**PST** is a shortcut of ‘Preset Point’. (1 ~128)

※**SPD** is a shortcut of ‘Speed’, (1~15)

※**DWELL** is a shortcut of 'Dwell time'. Its unit is seconds. (1~127)

2. LCD is displaying "001. PST SPD DWELL" now. You can edit the parameters such as <4> <ENTER> for PST, <1> <5> <ENTER> for SPD and <5> <ENTER> for DWELL. That means that the first preset point for sequence 1 is preset point 4, dome camera will staying 5 seconds there and dome will go to next preset with speed 15.
3. LCD is displaying "002.PST SPD DWELL" now. Please edit the parameters.
4. LCD is displaying "003.PST SPD DWELL" now. Please press <SETUP> to end the session if you need two presets only.
5. User is allowed to use ▲ ▼ keys to scroll up or down the all pages. User can also use ◀ ▶ keys to move the cursor to a item what they want to edit it.

■ Execute sequence function

1. Press a number key to specify a sequence number what you want to execution.
2. Press <RUN SEQ.> to start sequence function.

xxx P/T/Z/F/OSD Cam
Running Sequence 1~4

Fig.9.4.2

User can insert or delete a preset position from sequence line easily. Press <INS> key to insert a preset position into the sequence line. Press key to delete the current preset position from this sequence line.

User can press <ESC> or <ENDSEQ> key to exit sequence mode after sequence line editing is finished. The difference between these two keys is: <ENDSEQ> will remove all preset positions behind current preset position; <ESC> will keep all preset positions.

9.5 AUTO-PAN

User is allowed to control the built in Auto-Pan function of dome camera under 'Camera Control Mode'. Please follow the following instructions to manipulate use this function.

■ Setting

1. Press <AutoPan> to enter Auto-Pan mode. The LCD on keyboard will display "1.RUN 2.SETTING".

3.0 AutoPan select:
1. Run 2. Setting

Fig.9.5.1

2. Press **<2>** to start to edit parameters of Auto-Pan.
3. Move dome camera to a specific position and press **<ENTER>** to save it as the start position of scan region.

**3.1 Auto Pan Setting
Enter for Start Pos.**

Fig.9.5.2

4. Pan dome camera to another position and press **<ENTER>** to save it as the end position of scan region.

**3.2 Auto Pan Setting
Enter for End Pos.**

Fig.9.5.3

5. Using direction key to select the scan direction what you want. Press **<ENTER>** to confirm this selection.
6. Using direction keys to select speed of Auto-Pan function. Press **<ENTER>** to confirm this selection.

■ Execute Auto-Pan function

1. Press **<Auto Pan>** to enter Auto-Pan mode. The LCD on keyboard will display “1.RUN 2.SETTING”.
2. Press **<1>** to execute Auto-Pan function.

**xxx P/T/Z/F/OSD Cam
Running Auto Pan...**

Fig.9.5.4

9.6 CRUISE

User is allowed to control the built in Cruise function of dome camera under ‘Camera Control Mode’. Please follow the following instructions to manipulate this function.

■ Setting

1. Press **<CRUISE>** key on keyboard to select a mode of cruise function.

**4.0 Cruise select:
1. Run 2. Setting**

Fig.9.6.1

2. LCD is displaying “1. RUN 2.SETTING” now. Press **<2>** to enter modification mode.
3. LCD is displaying “ENTER for START POS” now. Press **<ENTER>** to start to input cruise path.

**4.1 Cruise setting
Enter for Start Pos.**

Fig.9.6.2

4. LCD is displaying “ENTER for END POS” now. User can move dome camera to patrol a path and this path will be recorded into dome camera as cruise path. Press **<ENTER>** to stop cruise recording procedure.

**4.2 Cruise setting
Enter for End Pos.**

Fig.9.6.3

5. LCD is displaying “ENTER for SAVING” now. Press **<ENTER>** to command dome camera to save this cruise path into EEPROM.

**4.3 Cruise setting
Enter for Saving..**

Fig.9.6.4

■ Execute cruise function

1. Press **<CRUISE>** key on keyboard to select a mode of Cruise function.

**Group[xx]Device[xxx]
Running Cruise...**

Fig.9.6.5

2. LCD is displaying “1. RUN 2.SETTING” now. Press **<1>** to start cruise function.

9.7 LENS CONTROL

User can control the functions of lens through “Lens Control Keys” under “Camera Control mode”.

■ Zoom Function

1. Tele : Press <Tele> key to zoom in the lens.
2. Wide : Press <Wide> key to zoom out the lens.

■ Focus Function

Press focus keys to adjust the focus of lens under manual focus mode.

1. Focus Near : Press <Focus Near> key to move focus lens near.
2. Focus Far : Press <Focus Far> key to move focus lens far.

■ Brightness Function

Press brightness keys to adjust the brightness of lens.

1. Brightness + : Press <Brightness +> key to increase the brightness of video.
2. Brightness- : Press <Brightness -> key to decrease the brightness of video.

■ AutoFocus Function

Press <AutoFocus> key to toggle AutoFocus function.

9.8 CAMERA SETTING

Press <SETUP> key to enter camera setting mode under “Camera Control Mode”.

User can setup the main features of cameras here. Password is required at first stage.

CAMERA SETTING MODE

2.0 Camera Setting
Enter password []

Fig.9.8..0

Please press ▲ ▼ keys to scroll page up/down and press ◀ ▶ keys to change the setting of items. Press <ESC> key to exit this menu.

9.8.1 Auto Turn-Around

Auto Turn-Around function allows user to keep tracking object even the object pass through the bottom of camera. You needn't rotate 180 degrees in pan direction to keep observing the object. This function will do this for you quickly

2.1 Auto Turn-Around
[OFF] ON

Fig..9.8.1.1

9.8.2 Zoom Speed Setting

User can select a zoom speed to manipulate the lens of camera.

2.2 Zoom Speed
[SLOW] FAST

Fig.9.8.2.1

9.8.3 Digital Zoom Ratio

User can select a proper digital zoom ratio to control the cameras. The higher digital zoom ratio, the lower video image quality on screen.

2.3 Digital Zoom X
2X

Fig.9.8.3.1

9.8.4 Alarm Setup

The dome cameras built in 4 alarm input connectors. User can configure the alarm configuration here.

2.4 Alarm Setup
Press Enter to Setup

Fig.9.8.4.1

Item 2.4.1 allows user to set a dwell time for all alarm pins. This dwell time means that dome camera will go to a specific preset position and wait for a 'dwell time' then go back to original status.

2.4.1 Dwell Time:
[010] sec

Fig.9.8.4.2

Item 2.4.2 allows user to set the configuration of alarm pin1. Press 'ENTER' to enter this menu.

2.4.2 Alarm1 Setting
Press Enter to Setup

Fig.9.8.4.3

Item 2.4.2.1 allows user to enable or disable alarm action related to alarm pin1.

2.4.2.1 Alarm1 Setup
[OFF] ON

Fig.9.8.4.4

Item 2.4.2.2 allows user to configure the normal status of alarm pin1. 'N.O.' means normal status is open circuit. That means alarm sensor will short this alarm pin when alarm sensor is triggered.

2.4.2.2 Alarm1 Setup
[NO] NC

Fig. 9.8.4.5

Item 2.4.2.3 allows user to configure the mapped preset position for alarm pin1. That means dome camera will go to that preset position when a alarm sensor is triggered on alarm pin1.

2.4.2.3 Alarm1 Setup
Preset : [001]

Fig. 9.8.4.6

9.8.5 Speed by Zoom

User can enable "Pan/Tilt speed inverse proportional to zoom ratio" function. User can track an object easily through this function.

2.5 Speed by Zoom
[OFF] ON

Fig. 9.8.5.1

9.8.6 Set PAN bias

This item is used by factory. User shouldn't change this setting. The default setting is '0'.

2.6 Set PAN bias
[+0]

Fig.9.8.6.1

9.8.7 Set TILT bias

This item is used by factory. User shouldn't change this setting. The default setting is '1'.

2.7 Set TILT bias
[+1]

Fig. 9.8.7.1

9.8.8 Camera Version Check

This item allows user to find the version of camera. User can inform this data to factory to troubleshoot encountered problems.

2.8 Camera Version
H/W:VxxS/W:Vxx

Fig. 9.8.8.1

9.8.9 Auto Save Function.

Auto Save function will record current position when user defined period of time is reached. Dome will go to that position after the power of your installation site is recovery after shutdown. (1~42 min)

2.9 Auto Save Func.
01 Min.

Fig. 9.8.9.1

9.8.10 Line Lock Phase Adjust Function.

This function enable user to adjust the line lock signal remotely. You can adjust the phase of line lock signal to synchronize the system from keyboard.

2.10 Llock Phase Adj.
Press ◀ ▶ to - / +

Fig. 9.8.10.1

9.8.11 Receiver Auxiliary Switch Function.

Users can press 1 or 2 to select one of two receiver auxiliary switches and then press ◀ ▶ key to turn on/off receiver auxiliary switch.

2.11 Receiver AUX
Press 1/2 to setup

Fig. 9.8.11.1

2.11 Receiver AUX1
ON [OFF]

Fig. 9.8.11.2

10.OPERATION - MULTIPLEXER

MULTIPLEXER CONTROL

Press **<Multiplexer Selection Key>** to enter multiplexer selection mode. Input the number of Multiplexer ID and press **<ENTER>** key to confirm your input (Fig.4.4.1).

User is allowed to control the selected Multiplexer remotely. Please reference the user's manual of Multiplexer to do an advanced control.

Multiplexer mode
Select MPX(1-16):xx

Fig.10.0.1

<Multiplexer> MPX:xx
Select Camera CH:xx

Fig.10.0.2

11.OPERATION - MATRIX

VIDEO MATRIX CONTROL AND SETTING

This function is reserved.

12. SPECIFICATIONS

GENERAL FEATURES

| | |
|------------------------------|-------------------------|
| Environment | Indoor |
| Controller I/F | RS-485 |
| Operating Temperature | 0° – 40 °C |
| Power Source | 12VDC |
| Power Consumption | 5W |
| Dimensions | H65mm X W300mm X D175mm |
| Weight | 1.5kg |

CONTROL FEATURES

| | |
|----------------------------|----------------------|
| Dome Camera | YES |
| Lens Control | Zoom: Tele/Wide |
| | Focus: Near/Far/Auto |
| | IRIS: Open/Close |
| Pan/Tilt Control | Manual |
| | Preset |
| | Sequence |
| | Cruise |
| | Auto-Pan |
| Multiplexer | YES |
| Mode Selection | Yes |
| Menu Control | Yes |
| Supported Protocols | |
| D&P protocol | YES |
| DSCP protocol | YES |

APPENDIX RS485 INTERFACE

CONNECTOR DEFINITION (Terminal Block)

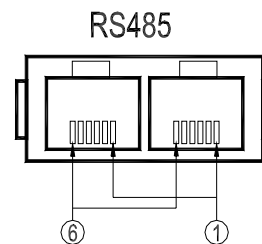
User can construct a RS-485 network through the terminal block located on rear panel of keyboard. Detailed pin definition can be found on rear panel. Please construct RS-485 network through 'D+' and 'D-'.

Terminal block is suitable for long distance installation. RJ-11 jack is suitable for demo and testing.

CONNECTOR DEFINITION (RJ-11 6P6C)

User could construct a RS-485 network through pin4 and pin5. Pin2 and pin3 is used for special purpose.

| Pin No. | Definition |
|---------|------------|
| 1 | - |
| 2 | +12V in |
| 3 | GND |
| 4 | DA |
| 5 | DB |
| 6 | - |



ID ADDRESS MAPPING

■ SYSTEM ID SETTING AREA


| Item | ID Address | Device Type | Remark |
|------|--------------------|------------------|------------------------|
| 1 | 00H (0) | Host controller | Keyboard or computer |
| 2 | 01H~ DFH (1~223) | Dome cameras | Total 223 Dome cameras |
| 3 | E0H~ EFH (224~239) | Multiplexer | 224~239 (Mpx1~Mpx16) |
| 4 | F0H~ FEH (240~254) | Control keyboard | CCTV control keyboard |
| 5 | FFH (255) | Matrix | |

■ MULTIPLEXER CHANNEL and CAMERA ID MAPPING


| MUX No | MUX ID | Camera ID | Remark |
|--------|-----------|--------------------|------------------------------|
| 1 | E0H (224) | 01H~ 10H (1~16) | Map to channel 1~16 of MPX |
| 2 | E1H (225) | 11H~ 20H (17~32) | |
| 3 | E2H (226) | 21H~ 30H (33~48) | |
| 4 | E3H (227) | 31H~ 40H (49~64) | |
| 5 | E4H (228) | 41H~ 50H (65~80) | |
| 6 | E5H (229) | 51H~ 60H (81~96) | |
| 7 | E6H (230) | 61H~ 70H (97~112) | |
| 8 | E7H (231) | 71H~ 80H (113~128) | |
| 9 | E8H (232) | 81H~ 90H (129~144) | |
| 10 | E9H (233) | 91H~ A0H (145~160) | |
| 11 | EAH (234) | A1H~ B0H (161~176) | |
| 12 | EBH (235) | B1H~ C0H (177~192) | |
| 13 | ECH (236) | C1H~ D0H (193~208) | |
| 14 | EDH (237) | D0H~ DFH (209~223) | Only 15 Dome can be connect |
| 15 | EEH (238) | None | Can connect to normal camera |
| 16 | EFH (239) | None | Can connect to normal camera |

APPENDIX FUNCTION TREE

■ DOME FUNCTION TREE

| Function | Operation | Description |
|---------------------|---|---|
| Dome Selection |  + <1> ~ <223> | Press number key to select a dome camera to control it. |
| Lens Control | <Zoom Wide> | Zoom Out |
| | <Zoom Tele> | Zoom In |
| | <Focus Near> | Focus Near |
| | <Focus Far> | Focus Far. |
| | <Auto / Focus> | Auto-Focus |
| | <Brightness -> | Brightness Down |
| | <Brightness +> | Brightness Up |
| Call Preset | <1> ~ <128> + <Go Preset> | Recall preset point |
| Save Preset | <1> ~ <128> + <Set Preset> | Record preset point |
| | <1> ~ <4> + <Run SEQ> | Execute Sequence |
| | <1> ~ <4> + <Set SEQ> | Edit Sequence |
| | <AUTOPAN> + <1> | Execute Autopan |
| | <AUTOPAN> + <2> | Edit Autopan |
| OSD Open | <Camera Menu> | Press this button for 3 seconds to open OSD on camera. |
| Lock | <LOCK/UNLOCK> | Lock/Unlock keyboard |
| Setup | <SETUP> | Enter setup menu of camera |
| 1. Auto Turn-Around | Use ◀▶ key to turn on/off | |
| 2. Zoom Speed | Use ◀▶ key to turn fast/slow | |
| 3. Digital Zoom | Use ◀▶ key to turn x1/x2/x4/x8 | |
| 4. Alarm Set | | On/Off, NC/NO and Preset setting of alarm function |
| 5. Speed by Zoom | | PAN/TILT speed proportional to zoom ratio |
| 6. Set PAN bias | | Factory setting |
| 7. Set TILT bias | | Factory setting |
| 8. Camera Version | | Camera's version display |
| 9. Auto Save Func. | | Auto restoring parameters setting |

■ MULTIPLEXER FUNCTION TREE

| Function | Operation | Description |
|-----------------------|--|------------------------|
| Multiplexer Selection | <1> ~ <16> + <ENTER> | Multiplexer selection |
| Multiplexer screen |  + <1> ~ <16> | Change Display Channel |

■ SYSTEM FUNCTION TREE

| Function | Operation | Description |
|--------------------------|--|--|
| System Setting | <SYS> | CCTV System Setting Mode |
| 1. System Linking | | Scan the existed devices |
| 2. Set Keyboard ID | | Keyboard ID Setting |
| 3. System Monitor | | MPX,MTX,SuperMPX,SuperMMX |
| 4. RS232 Baud-rate set | Use ◀▶ key to Select 2400/4800/9600 | |
| 5. Date setting | | Date setting : Year, Month, Day |
| 6. Time setting | | Time setting : Hours, Minute, Second |
| 7. System T/D correction | | System Time/Date Correction |
| 8. System Alarm List | | Record the Latest 10 Alarm Information |
| 9. RS232/485 mode | Use ◀▶ key to Select RS232/485 Mode | |
| 10.Key Press Beep | Use ◀▶ key to Turn ON/OFF | |
| 11.Alarm Reaction | Use ◀▶ key to Turn ON/OFF | |
| 12.Password | | Set New Password |

APPENDIX FIRMWARE UPGRADE

Please follow the following procedures to upgrade the firmware of keyboard.

STEP1: Connect PC to the control keyboard through standard RS-232 cable.

STEP2: Execute the Auto-unpack.exe on the PC.

This program will create a directory which is called as "Keyboard" then it will unpack three files into that directory. They are 'Keyboard.exe', 'Keyboard.tsk' and 'Readme.doc'. Please read the Readme.doc carefully before upgrading your keyboard.

STEP3 Make sure the setting of 'S2' switch is set to slave mode on the rear board. Please reference 'Section 2.3' to make sure S2 (RS-232 setting) is set to 'S' (slave) position.

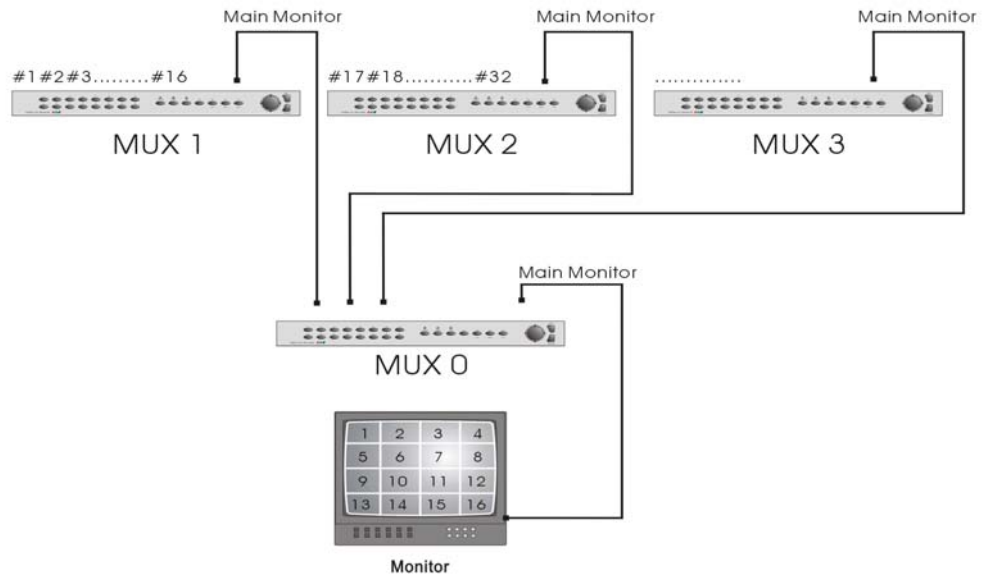
STEP4 Press 'SETUP' key and do not release it then power up the keyboard. The LCD will display "Ready to Download" message on keyboard.

STEP5 Execute Keyboard.exe on the PC.

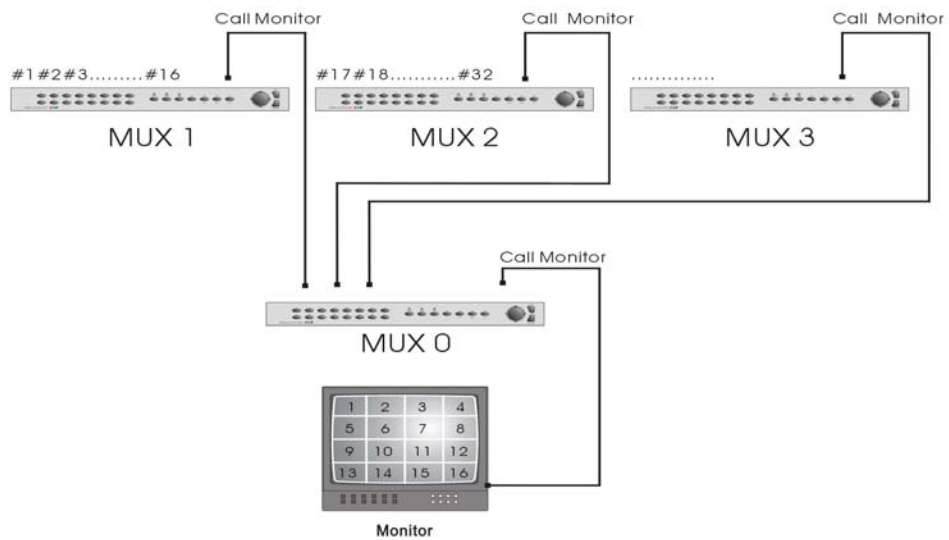
The download process will be started if you select a correct COM port for this windows application. It will spend one or two minutes to finish the progress. Please power off the keyboard after the download process is finished. Keyboard will operate through new firmware after user power up again.

APPENDIX SuperMPX / SuperMMX

■ SuperMPX MODE



■ SuperMMX MODE



APPENDIX TROUBLESHOOTING

Please reference “D731X Troubleshooting Guide - Class1”.
The detailed information and instructions are listed in that document.