

# **COSTAR**

## **VIDEO SYSTEMS**

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**IP Keyboard**

**CVI4500**

**User Manual**

**V2.03-4 022017**

## Preface

Important Information and safeguards before installation.

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1. Do not expose the device outdoors in rain or humid environment;
2. Do not use the device in hot closed environments without proper ventilation;
3. Do not spray liquid into the device, or add foreign materials;
4. Avoid installation in areas with flammable, explosive or corrosive gases;
5. To prevent fire, do not use non approved power cables;
6. To ensure device safety, do not open or dismantle the unit or open cover under power;

★

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Record the product identification information marked on the bottom of the unit. You will need the model and serial number to obtain technical support.

*NOTICE: Manufacturer reserves the right to amend or modify this information without prior notice. This material is protected under copywrite laws and cannot be copied, altered or modified without the express permission of the manufacturer.*

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## **Part 1 Keyboard Description**

### **1.1 System function summary**

An integrated monitoring and control system based on an IP Digital Video wall matrix requires control stations such as this keyboard for ease of operation and control of the video wall.

The CVI-4500 Keyboard is especially designed for HD IP Network Digital Matrix. Its major function is to control and manage the CVI8XM IP Digital Matrix, such as the division of each monitor in multiple windows or screen splicing, image switching, preset set and call, keyboard lock and other functions.

The CVI-4500 keyboard controller is equipped with a large size blue LCD screen and a 3-D joystick, connected to the network via a CAT5 Ethernet cable.

## 1.2 Technical specifications

Display:	111mm x 62mm blue LCD
Communication:	network
Connection:	RJ45
Keys quantity:	47
PTZ control:	3-D joystick
Operation temperature:	10°C ~ +45°C
Operating voltage:	9VDC
Power:	5.0W
Weight:	1.5KG
Installation dimension:	379 (L) x 189 (W) x 56 (H) mm
Installation method:	Desktop installation
Operating environment:	Indoor

***⚡ Please keep device away from strong electromagnetic interference sources.***

## **Part 2 Precautions before use**

### **2.1 Inspect the keyboards when opened**

#### **2.1.1 Open-package inspection**

When you receive a CVI-4500 keyboard controller, please open the package and inspect for any visual damage or cracked LCD screen and if the keyboard appears intact.

#### **2.1.2 About front panel**

The function of every key on the panel, the function of every interface in the rear panel are explained in detail in the user manual.

The labels attached on the bottom is extremely important for the after-sales service. Please do not remove. You will not be able to request service or warranty without the labels. The serial number that is printed on the label is required when calling for technical support.

## 2.2 Understanding the keyboard

### 2.2.1 Keyboard panel and its keys function

CVI-4500 keyboard controller diagram shows as followings:



The function of each key on the keyboard is shown below:

Keys	Functions descriptions
<b>F1~F8</b> <b>M1~M8</b>	real-time function button, display on the LCD screen
<b>0~9</b>	number
<b>WIN</b>	Window/screen selection
<b>CAM</b>	camera selection
<b>CLEAR</b>	Clear or cancel the input data value, cancel the operation
<b>MENU</b>	menu button

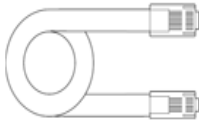
<b>ENTER</b>	Press for selection confirmation, Entering sub-menu and inputting IP address. This button also can input symbol “.”
<b>LOCK</b>	Unlock
<b>Joystick</b>	control the Pan-Tilt movements (up, down, right, left, top left, down left, top right, down right). control the movements of menu cursor (left, right, up, down)
<b>Joystick head zoom</b>	To control the zoom of the camera lens (rotate left or right)
<b>NEAR</b>	zoom near
<b>FAR</b>	zoom far
<b>OPEN</b>	Iris open
<b>CLOSE</b>	Iris close
<b>SHOT</b>	Auxiliary button
<b>RUN</b>	Running/operating button
<b>STOP</b>	stop button
<b>MULT</b>	Multiplexer/splitting button
<b>PRESET</b>	preset button
<b>Power indicator</b>	blue indicator light is constant bright
<b>Communication indicator</b>	green indicator light is flicker



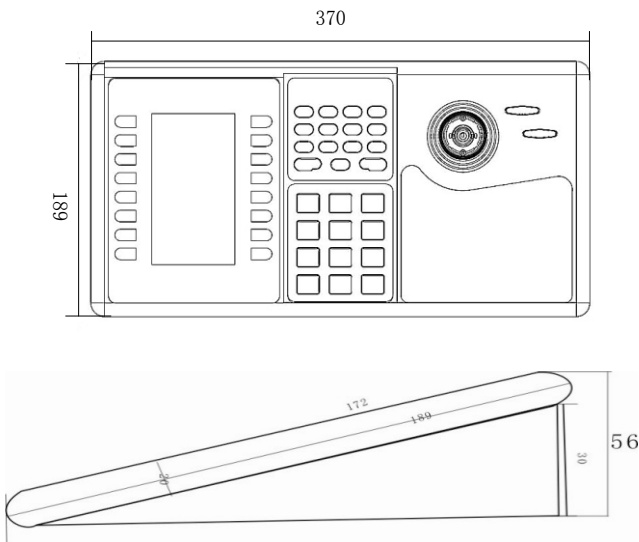
*Please do not push the joystick too hard or too fast as damage to the joystick mechanism may occur.*

### 2.2.2 Keyboard power cable

The keyboard is supplied with an RJ45/RJ11 cable. Plug this cable in COM1-COM3 of keyboard and then connect it to the “KEYBOARD” port of Junction box, which is supplying the power.



### 2.2.2 keyboard dimension (mm)



### 2.2.3 Power supply

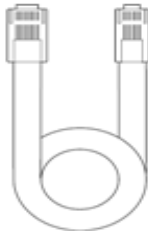
3 power supply methods available for Keyboard.

#### Method 1: Power supply adapter

Every keyboard is furnished with a 12VDC 2.0 Amp power supply adapter. It will power the keyboard when plugged directly into the keyboard.

#### Method 2: Junction box

CVI-4500 is equipped with an RJ45/RJ11 cable, to plug in any port of CVI8XM COM1~COM3 and KEYBOARD port on junction box.  
(need to verify)



#### Method 3: POE

CVI-4500 is equipped with a CAT5 network cable, to supply power by connection of the keyboard to a POE switch and keyboard network port.

*⚡: Method 3 is only for POE keyboard, model CVI4500-POE.*

### 2.2.3 Keyboard communication cable

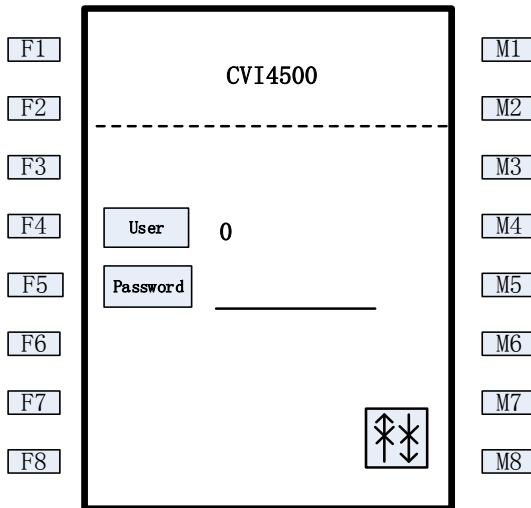
One CAT5 network cable is included in the box. Please connect the keyboard's "NET" port to the LAN by this cable, observing that HD IP Digital Matrix is also connected in the same LAN.

## Part 3 Keyboard operation

Connect the power and communication cables before using the keyboard. If all connections are correct the keyboard will power up.

### 3.1 User Login

After power is switched on you can see the image below:



On the Login interface, the user ID is from 0 to 255,

0 is administrator, is to set operation permission for the keyboard itself, from 1 to 255 are operators or standard users, which can control the HD Network Digital Matrix.

First time login, User name is 0 and no password. It allows you to enter the manager operation interface to set the parameters.

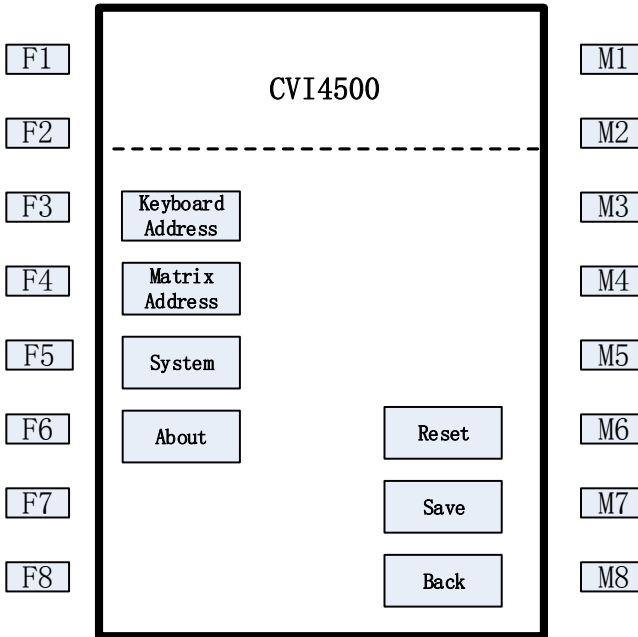
Operation steps: F4>0>ENTER>ENTER

User name: 1, no Password. It allows you to enter the user operation interface to control the HD Network Digital Matrix.

Operation steps: F4>1>ENTER>ENTER

## 3.2 Interface of keyboard setting

After entering the administrator credentials, you can see the following image on the LCD screen:



This interface can set some specific operation such as the keyboard address, Matrix address, system and so on.

In addition, this interface can accomplish the operation of saving user input variables or reset the device to factory default settings.

You can press F1-F8 and M1-M8 to do corresponding operation.

### 3.3 Keyboard address

When you on the setting interface of keyboard, to press F3 to enter the “keyboard address” setting interface, the LCD screen display below:

F1	<div style="text-align: center;"> <b>Keyboard Address</b> </div> <hr style="border-top: 1px dashed black;"/> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px 5px;">IP</div> <div>192.168.6.198</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px 5px;">MASK</div> <div>255.255.255.0</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px 5px;">GATE</div> <div>192.168.6.1</div> </div> <div style="text-align: right; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px 10px;">Back</div> </div>		M 1
F2			M 2
F3			M 3
F4			M 4
F5			M 5
F6			M 6
F7			M 7
F8			M 8

The image above is the default setting of the keyboard controller. You can set IP, MASK and GATEWAY as follows:

Press F3 to change the IP address;

For example: If you want to change the IP to 192.168.6.198, the operation steps:

F3>1>9>2>ENTER>1>6>8>ENTER>6>ENTER>1>9>8>ENTER

Press F4 to change the MASK address. The operation steps are the same as above;

Press F5 to change GATEWAY address. The operation steps are the same as above.

- *Remark: The “ENTER” button represents symbol “.”, when you set the IP, MASK, GATE. If you finish the input of number, the button represents the confirmation of the number you entered.*
- *The value of IP, MASK and GATE is set according to required parameters.*
- *The default IP address: 192.168.6.198. Subnet mask: 255.255.255.0. Gateway: 192.168.6.1. Source port: 1026. Destination port: 1026.*

*Attention: The keyboard's IP address and its HD Network Digital Matrix's IP address need to be in the same network segment, in the meantime, conflict of IP address needs to be avoided.*

### 3.4 Set IP Matrix address

In the interface of keyboard setting, Press F4 to enter the “matrix address” setting interface, it will display the following:

	Matrix Address		
F1			M 1
F2			M 2
F3	Port1	1026	M 3
F4	IP1	192.168.6.17	M 4
F5	Port2	1026	M 5
F6	IP2	192.168.6.18	M 6
F7			M 7
F8		Back	M 8

Press F3 , to set the port 1 , default setting is 1026; Press F4 ,and input the IP1 address of the HD network digital matrix was controlled ;

Press F5 , to set the port 2 , default setting is 1026; Press F6 ,and input the IP2 address of the HD network digital matrix was controlled ;



This keyboard can control two HD network digital matrix at the same time;

Example: HD network digital matrix

Port: 1026

IP address: 192.168.6.220

Operating steps:

Port1: F3>1>0>2>6>ENTER

IP1: F4>1>9>2>ENTER>1>6>8>ENTER>6>ENTER  
>2>2>0>ENTER

After setting, Press M8 and choose “back”, then press M7 and choose “save”.

*Attention: Setting the matrix's IP address can be used for controlling the selected HD network digital, but not to be used it's own IP address.*

### 3.5 System setup

Press F5 will enter the “system” setting interface. The display will show as follows:

F1	System		M1
F2	-----		M2
F3	Password		M3
F4	Login	None	M4
F5			M5
F6			M6
F7			M7
F8		Back	M8

You can set up the password, to login to this page.

### **3.5.1 User's password**

Press F3 , allows you to enter the password settings which can set up the user's password .

EX: you can set user 0's password as 12345

Operating steps :

F3>0>ENTER>F4>1>2>3>4>5>ENTER

At the same way, you can set other user's password, after setting, please save and exit. Then when you login next time, it will be updated to the new password.

### **3.5.2 Set the way of login**

On the page of setting interface, press F5 to choose the way of login .

EX: set up the way of login as Local

Operation steps: F5>M6

After setting , please save and exit .

*Attention: The password for user 1 to 255 will be valid only when you set up the way of login as Local.*

## **3.6 About**

At interface of administration, to press F6 to enter "About", it could check current version, date, series number.

## **3.7 Save, recover and return**

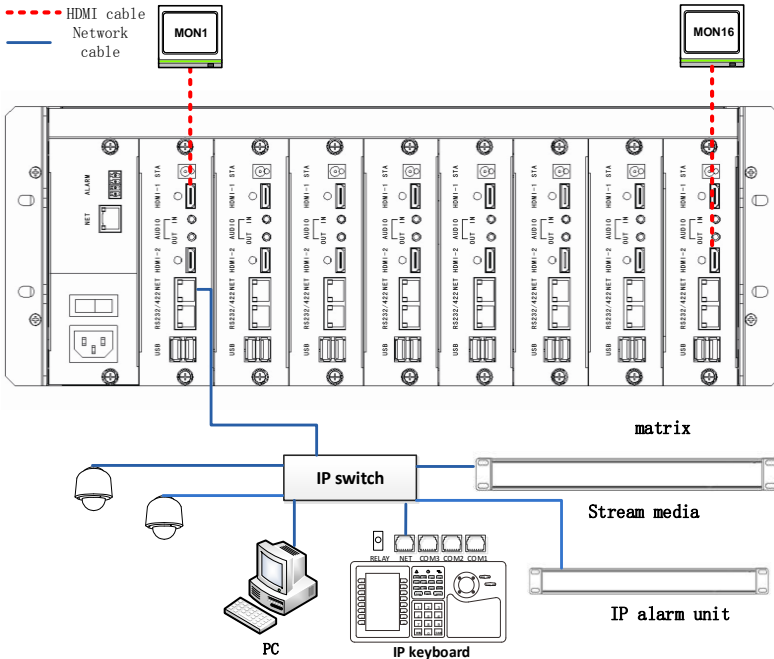
Save: to revise any items of keyboard, it must go back to user 0 main interface to save, if not, the revision will not effect.

Recover: to call initialization set.

Return: return to up one level.

## Part 4: HD network digital matrix operation

Connect the CVI-4500 keyboard controller's NET port and the HD network digital matrix's NET port into the same LAN as follows;



On the page of the HD network digital matrix's WEB interface, you can accomplish the set of screen and windows layout, get the list of camera source, then you can control and operate the HD network digital matrix by the CVI-4500 keyboard.

When you use the keyboard for the first time, you will need to set up the keyboard controller 's IP address and gateway , input the IP and the port parameter of controlled HD network digital matrix, then save it .

After setting up the keyboard 's parameters, choose a user to log in , then enter the operation interface. You can perform all the functions listed below:

## Operation introduction

Function	Operation introduction
Split screen	N ( screen No.) +MON+M (1/4/9/16) +MULT
Split screen run	N ( screen No.) +MON+M (salvo No.) + RUN
Split screen stop	N ( screen No.) +MON+M (salvo No.) + STOP
Switch the video to the screens	N (screen No.) +MON+M (camera No.) +CAM
Group operation on screen	N ( screen No.) +MON+M (group No.)+RUN
Stop screen groups	N ( screen No.) +MON+M (group No.)+STOP
Video splicing	SHOT+MON+N ( screen No. on matrix top left corner) +MON+M

	( screen No. on matrix bottom right corner ) +MON
Exit the splicing	SHOT+WIN+N(WIN No.)+WIN
Preset Set	N+SHOT+PRESET
Call preset	N+PRESET
PTZ control	Control the CAM PTZ by joystick
CAM 上切	FWD
CAM 下切	BWD
Lock the keyboard	SHOT+LOCK
Unlock the keyboard	LOCK
Attention: groups contain tour, salvo, screen cannot be split	

## Part 5 Appendix

### 5.1 introduction of ports

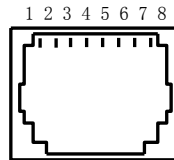
There are 4 RJ45 ports at the bottom of the keyboard, respectively are:

COM1: RS485

COM2: RS422

COM3: RS232

NET: 10/100M Ethernet



The definitions of COM ports are as follows:

COM1	COM2	COM3
1. B	1. T+	1. RXD
2. NC	2. T-	2. NC
3. VCC	3. VCC	3. VCC
4. VCC	4. VCC	4. VCC
5. GND	5. GND	5. GND
6. GND	6. GND	6. GND
7. NC	7. R-	7. NC
8. A	8. R+	8. TXD



## 5.2 Check for faults

You can solve the problem by following these instructions:


### **Fault 1: Power indicator light doesn't light when power on , and no display on screen .**

- A. check the power supply, for example: is the connection between plug and socket normal ?
- B. The cable connection is faulty, which may make the keyboard to be powered off.

### **Fault 2: Cannot log in**

- A: connection is wrong when control the HD network digital matrix or other reasons lead to the communication mistakes.
- B: the user's name or password is right or not?

### **Fault 3: Cannot control the network master or camera**

- A: connection is wrong or other reasons lead to the communication mistakes. (the indicator light is lighting shows that the communication is right.)
- B: Check the network connection icon  , if it shows this icon , you cannot communicate as normal ,please check the communication cable.

For any additional questions please contact our Technical support department at 469-635-6820 Monday through Friday 8:00 AM -5:00 PM CST.

Note: The information supplied in this manual is subject to change without prior notice.

