



X3 Controller

USER MANUAL

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Chapter 1 Overview

1.1 Overview

X3 is a professional LED display controller. It possesses powerful video signal receiving and processing capacities, and supports HD digital signals, in which the maximum input resolution is 1920×1200 pixels. It supports HD digital ports including HDMI and DVI, and seamless switching between signals. It supports arbitrary scaling and cropping of video sources.

X3 adopts 4 Gigabit Ethernet outputs, and it supports LED displays of 4096 pixels in maximum width or 2560 pixels in maximum height. Meanwhile, X3 is equipped with a series of versatile functions, which have many advantages in applications of manufacture and engineering.

1.2 Features

• Performance

Supports arbitrary switching, scaling and cropping of video sources

Supports screen offset

Supports improved gray-scale performance at low brightness

Supports brightness and chromaticity adjustments

Input

Supports 2 kinds of video input ports, including 1×HDMI and 2×DVI Supports input resolutions up to 1920×1200@60Hz

Supports HDCP 1.4

Output

Loading capacity: 2.60 million pixels, maximum width: 4096 pixels, maximum height: 2560 pixels

• Control

Dual USB 2.0 for high speed configuration and easy cascading among controllers



1.3 Structure

• Dimensions: 1U standard box

The following figure shows the dimensions of the X3 for reference:

Main view (unit: mm)



Rear view (unit: mm)



Top view (unit: mm)







• The Front Panel



1	Digital tube Displays current brightness value The up and down buttons are used to adjust the brightness value, the adjustment range is 0-16.
2	<u>Button</u>
HDMI	HDMI button Switch the picture signal to HDMI signal, the button light is always on after selecting the signal.
DVI1	DVI1 button Switch the picture signal to DVI1 signal, the button light is always on after selecting the signal.
DVI2	DVI2 button Switch the picture signal to DVI2 signal, the button light is always on after selecting the signal.
PART	PART button Turn on/off the cropping function.
3	Power button Switch the X3 on/off



• The Back Panel: Interface type and specifications



Input In	terface					
3	HDMI HDMI 1.4 standard, receives HDMI signal format image from devices such as computer or HD player, maximum supports 1920×1200@60Hz					
4	DVI1/2 Receives DVI signal format image from devices such as computer or HD player, maximum supports 1920×1200@60Hz					
Output	Interface					
5	<u>Gigabit Ethernet</u> 4 RJ45 Gigabit Ethernet outputs, which connect with the LED display.					
Control	Controlling Interface					
2	IN USB input, which connects with PC to configure parameters.					
2	OUT USB output, cascading with the next controller.					
Power						
1	Power interface AC 100~240V, 50/60Hz, maximum power: 8W, IEC-3 power interface.					
Other Specifications						
	g temperature: -40°C~70°C tic design, low EMI radiation					



Chapter 2 Functions

2.1 Video Processing

• Scaling, cropping

Supports scaling and cropping; maximum width is 4096 pixels, maximum height is 2560 pixels.

• Better gray

2.2 Sending

- 4 Gigabit Ethernet outputs, single network port loads up to 655360 pixels.
- 16 sets of preset parameters, supports renaming, saving and loading.
- Supports brightness and chromaticity adjustments.
- Supports auto brightness adjustment in conjunction with multifunction cards.
- Supports loop backup of the primary and secondary network ports to ensure that the LED screen is displayed by the backup network cable after the main network cable is disconnected.
- Connection relationship between receiving cards is supported to save in the sender, and it is sent by the sender in real time; each network port supports the connection diagram storage of 100 receiving cards.
- Supports brightness calibration, chromaticity calibration, and soft edge.
- Supports self-generated test images: Vertical Moving Line, Horizontal Moving Line, Right Slash Move Down, Left Slash Move Down, Grid Move Down, Red, Green, Blue, White, Black, Gradient Red, Gradient Green, Gradient Blue, Gradient White.



Chapter 3 Operations

3.1 Signal Connection





3.2 Power On

Press the power button on the front panel of the X3, it will be turned on and enter the self-test status, all the button lights will light up in sequence until booting successfully. The device will display the last saved settings, the new device will display the factory default settings.

3.3 Software Control

Official website: http://www.colorlightinside.com.

Download the iSet software at "Support-Download-Software Download". Run the iSet software, the main interface is showed as follows.



3.3.1 Device Information

• Detect senders

Connect the PC to device with USB cable, turn on the device.

Click "Detect Senders", acquire the device information.

Index	Name	Туре	Port 1	Port 2	Port 3	Port 4
1	Sender 1	X3 1.0	🥥 1	0	0	0

USB control and detect device information

Colorlight

• Detect receiver cards

Click "Detect Receiver Cards", acquire the receiver cards information.

Detect Senders	Index	Name	Туре	Port 1	Port 2	Port 3	Port 4			
Detect Receiver Cards	1	Sender 1		🥚 4	0	0	0			
Jetect Receiver Cards										
Failed Cable Only	Port	Index	Туре	Ten	nperature	Cabl	e	Working Time	 	
ort Filtration	1	1	5A 5.88			OK		1:05:24		
All Port	1	2	5A 5.88			OK		1:05:24		
1 2 3 4	1	3	5A 5.88			OK		1:05:24		
	1	4	5A 5.88			OK		1:05:24		

3.3.2 Design



On this page, the function of sender can be set as followed:

• Send/Read back the mapping of receiver



• * • * • * • * 1 2 3 4		Cabinet	t Size	×
+ Add Cabinets Readback		Width 128 💲	Height 128	≜ ▼
Custom	r	ОК	Cancel	
Type Management				

Choose the sender net ports that need cabinets to be added. Click "Add Cabinets" -"Custom", add cabinets according to the actual size of the cabinets. After adding certain amount of cabinets, set up the mapping according to the connection of real situation.

	Save Connection
Click the button "	Save Current Sender ?" to save the mapping.
	+ Add Cabinets Readback
Click the button "	Readback from Current Sender " to read back the mapping

• Port backup and sender backup



Right click the output port which you want to set as backup: Port Backup of the main port. For example, set the port 2 as the backup of port 1.



			-	
0	1 - Sender 1 2 - Sender	e	Import Mapping by Sender Import Mapping from other Sender)
		et e	Export Mapping by Sender	
1200			Delete Rename	
			Mapping From Sender	
1400			Restore Factory Settings Port Area	
		D	Sender Backup	Sender 1(Sender 1)
0			Cabinet Parameters	
600				
0	1 - Sender 1 2 - Sender 2 X3 X •	00	1460 [1600 [1600 [1600] 1920	Cancel Backup Source Sender: Source Sender: Save All Senders

Right click the sender which you want to set as backup. For example, set the sender 2 as the backup of sender 1.

• Rename

1 📼 Sender 1	X3
200	Rename
	Restore Factory Settings
	Ţ
	Rename X
Name X3	

Right-click the sender that needs to be renamed, choose "Rename" on the menu, and directly input the name of the sender into the popped-up window (limited to 50 English characters).



• Mapping from sender



Choose "Mapping From Sender", the mapping of cabinets will apply the mapping stored in the sender.

• Restore factory settings

1 - Sender 1	Rename		
	Mapping From Sender	iSet	×
	Cabinets Indicator		
	Restore Factory Settings	Device will be restored to factory setting	s. Continue?
	Port Area	Yes	No
	Cabinet Parameters		
	Cabinet Information		

Choose the sender which needs to restore factory settings, select "Yes" on the popped-up window.



3.3.3 Video Source Setting

0	iSet Device Information Design Video Source Settings Control				n 🖵	_ 0
k	₩ 41%					
		н	IMC	DVI1 DVI2		
۹	200 1400 1600 1800 1200 1200 1400 1600 1800 1800 1800 1800 1800 1800 1800 1800 1	^ I	nput	Video Format	Cropping	EDID
		F	IDMI	1920x1080@60Hz8bitRGB	13.	•••
			DVI1	No Signal	包.	•••
		(DVI2	No Signal	頃	•••
		Ν	/lain			
			X		Keep Aspect Ratio)
			Y	0 🛊 Height 1080 🛊	1:1	
	HDM			Save Preset	Recall P	reset
108	c					
	2,0/4,600					
<)	~				
lew.pr						

On this page you can setup the followed function:

• Main input display setting

HDMI DVI1 DVI2									
Input	Video Format	Cropping	EDID						
HDMI	1920x1080@60Hz8bitRGB	Ū,							
DVI1	No Signal	Ū,	•						
DVI2	No Signal	Ū,	•						
Main									
Х	0 🌲 Width 1920 🖨 🗌 K	eep Aspect Ratio							
Y	0 🜲 Height 1080 🌲	1:1							

Choose video source - modify the start position of X, Y, width, height.

Two operations: input values on the interface; drag the position and the size of the signal window in the view area.



• Cropping and EDID setting

	(HDMI	DVI1 DVI2			
		Input	Video Format	Cropping	EDID	
		HDMI	1920x1080@60Hz8bitRGB	[] ,	•••	
		DVI1	No Signal	頃.	•••	
		DVI2	No Signal	1 1 ,	•••	
			ндмі 🗸			
0			500 150	Cropping	Information	
				X [Y [920 ¢ 080 ¢
500			HDMI			
1000						
1500				,		

Select signal source of the image that needs to be cropped, click the cropping icon to enter the cropping interface. In the cropping interface, check "Crop", and set X, Y, width and height in "Cropping Information", then the cropping setting is auto saved.

				HDMI - EDID \$	Setting	_
					1920X1080	\sim
HDMI	DVI1 DVI2			Custo	m	
Input	Video Format	Cropping	EDID	800 X	600	
HDMI	1920x1080@60Hz8bitRGB		•••	1024 >	(768	
DVI1	No Signal	13.	• • •	1280 >	(1024	
DVI2	No Signal	恒.	•••	1600 >	(900	
				1920 >	(1080	
				1920 >	(1200	

As shown in the figure, click the EDID setting icon after the corresponding signal, the EDID setting window will pop up. Click the drop-down list to select the mainstream resolution, or customize the resolution.



• Save and recall preset



Click "Save Preset", select one of preset serial number, modify the saved name of preset, finally click "OK" and finish the setting.

Recall F	p Aspect Ratio	
1.DVI1(800*600)	2.DVI2(800*600)	1:1
3.HDMI(800*600)	4.HDMI(1600*900)	Recall Preset

Click "Recall Preset", and select the corresponding preset.





3.3.4 Control

iSet	Device Information	Design	Video Source Setting	s Control		
		44% V	. 1999 1999		 	Sender Selection All Senders Brightness 25% 50% 75% 100% Better Gray Color Adjust by Color Temperature Color Adjust by Color Temperature 6500 Default Test Patterns
					了 Colorlight	Screen Freeze Black O
					www.colorlightinside.co	om 🖵

This interface can set the function as followed:

• Brightness adjustment of senders

Brightnes	s		
25%	50%	75%	100% 🗸
			56% 🗘
Better	Gray		

It supports setting the sender's brightness value and setting "Better Gray" of the sender. We can turn "Better Gray" on to optimize the displaying results of the screen under low brightness.

• Color temperature adjustment

Color	Color
Adjust by Color Temperature	Adjust by Color Temperature
255 ‡ 255 ‡ 255 ‡	6500 € 2000 6500 10000 Default

When unchecking the "Adjust by Color Temperature" option, adjust R, G, and B values separately; when checking "Adjust by Color Temperature", drag the slider to adjust the color temperature value.





• Test Patterns, Black, Freeze



The users can set different test patterns based on their needs. Click on a certain test pattern icon, the sender will show the corresponding test result. We can view the display of the screen through "Test Patterns", and to detect and diagnose the screen.

The X3 supports "Freeze" and "Black". Click on "Freeze", the picture on the screen will freeze; Click on "Black", the screen will become black and display nothing.



Visual Future

Colorlight US, Inc. www.colorlightinside.com