User Manual of XB-809 Master Controller



I. Features of master controller

Salient features:

- 1. Ultra-large touch screen, intuitive display, quick and simple operation, controller status monitoring at any time.
- 2. Powerful performance, able to load up to 160,000 pixels or 80 slave controllers
- 3. Adopting GPS/Beidou dual satellite synchronization module to realize the synchronization of each frame between multiple devices.
- 4. Equipped with RS-485 ports (Modbus) and UDP ports for connecting to third-party devices.
- 5. Supporting Bluetooth control, mobile phone control, real-time PC/mobile phone APP control, LAN file replacement, and the Internet remote file replacement.
- 6. Supporting timing play and multi-level encryption function.

General features:

- 1. The play content is stored in the SD card, which can store up to 32 effect files. The SD card capacity supports 4G-32GB, supporting single effect play, effect cyclic play, and effect acceleration and deceleration.
- 2. The master controller can automatically/manually the slave IDs. Multiple controllers can be set together or individually.
- 3. The master controller has multiple built-in effects and dimming function to test the loaded multi-channel lamps.
- 4. The controller has DMX512 address writing and testing functions. It can write address for DMX512 IC loaded on single port or all ports, and test the address.
- 5. The controller adopts standard TCP/IP network protocol, and the signal transmission is more stable. 100-BASE/1000-BASE transmission rate can be selected.
- 6. It can be used offline with our T-730/T-790 and can carry up to 160,000 pixel points or 80 controllers.
- 7. Support GPS/BDS dual-mode-satellite synchronization, wireless RF synchronization, and GPS/BDS dual-mode cyclic synchronization.
- 8. IC controller for DMX lamps comes with address writing function.

II. Support controller: T-790/T-790D/T-750/T-730

III. Controller image





Controller identi	fication		
1. LCD screen	2. RS485 control interface	3. Controller	4. GPS/BDS
		indicator	interface
5. SD card slot	6. Network interface and	7. Power interface	8. Power switch
	signal indicator		
9. GPS/BDS	10. 4G industrial router	11. 4G antenna	
antenna (optional)	(optional)	(optional)	

IV. Definition of indicators and keys

1. Indicator definition:

To wer indicator Aiways on alter power on

STATUS	Status indicator	Off when normal
Signal	Synchronous signal indicator	Frequently flash when there is an RF/GPS/BDS signal
NET1 signal indicator	Cascade signal	Frequently flash when there is a signal
NET2 signal indicator	Cascade signal	Frequently flash when there is a signal

2. Port definition

Name	Marking Remarks	
Power interface	AC110-240V Power cable equipped when leaving the fa	
GPS/BDS antenna interface	GPS/BDS	GPS/BDS satellite antenna interface
A1/B1/GND		RemarksPower cable equipped when leaving the factoryGPS/BDS satellite antenna interfaceChannel 1 485 interface (third-party device, etc.)Channel 2 485 interface (connect to consoledecoder and other devices)RJ45 network signal interface 1RJ45 network signal interface 2SD card slot
RS485 interface	A2/B2/GND	Channel 2 485 interface (connect to console decoder and other devices)
NetworkcascadeNET1RJ45 netwointerfaceNET2RJ45 netwo		RJ45 network signal interface 1
		RJ45 network signal interface 2
SD card	SD card	SD card slot
SD caru		

3. Frame frequency of speed level:

Speed	Frame	Speed	Frame	Speed	Frame	Speed	Frame
Level	frequency/sec	Level	frequency/sec	Level	frequency/sec	Level	frequency/sec
1	4 frames	5	8 frames	9	14 frames	13	23 frames
2	5 frames	6	9 frames	10	16 frames	14	25 frames
3	6 frames	7	10 frames	11	18 frames	15	27 frames
4	7 frames	8	12 frames	12	20 frames	16	30 frames

V. Wiring diagram

1. Single could master controller control



2. Integrated online/offline control



3. Integrated online/offline control of multiple master controllers



4. Synchronous control of GPS/BDS satellite signal of multiple master controllers



Note: The synchronization method is GPS/BDS dual-mode satellite signal control. When the controller adopts satellite for synchronization, the antenna of the satellite shall be placed outdoor.

VI. Introduction of touch screen operations

(1) Screen protection interface (2) Play interface (3) Function interface

1. Screen protection interface

1.1 Screen protection interface: If the main touch screen has no operation for 1 min, it will enter the screen protection interface.



1.2 Display content

Status: Play/Pause

Program: Current program number/total number of SD card programs

Speed: Current play speed level/maximum play speed level

Brightness: Current lamp display brightness/maximum display brightness

Time: Current time

1.3 Exit screen protection: Click the screen to exit and enter the play interface

2. Play interface

2.1 **Play Interface**: Normal play of master controller, display the play status and set parameters of current master controller



2.2 Display content

1. Mode: Current play program (click the up/down arrow on the mode icon to switch the mode)



2. **Speed**: Current play speed (click the up/down arrow on the mode icon to switch in the range of 1-16)



3. Brightness: Current lamp brightness (click the up/down arrow on the speed icon to switch the brightness)



Click "Brightness 255":

Pop up a numeric keypad for entering values.

Change the brightness of all channels.

Click "*": Change the brightness of each channel.

The click 255.

Pop up a numeric keypad for changing value.

Note: Brightness parameters are saved on the slave controller.

4. Play/Pause: Click to switch



5. Cycle/Not Cycle: Click to switch



6. **Auto play** (not forced/timing play)/**forced play** (switch between manual and forced play mode)/**Timing play** (local/remote timing)



7. Online state: Display whether the controller is online



8. GPS switch: Turn on GPS when the synchronous mode is selected. If connected normally, the upper right corner of the play interface displays "GPS connected successfully".



9. Save current settings: Click to save the settings



Note: If you need to keep the settings on the play screen, you need to click <u>Save Current Settings</u> before shutting down the computer.

3. Test function interface



in the lower right corner of the play interface to enter the

function interface



(1) Built-in effect (2) DMX settings (3) Auxiliary functions (4) System parameters

*1. Built-in effect: Play the built-in effects in the controller

		Flash Test	Count Dimming
	IC: DMX	Color Change	Color Gradient
		All Change	All Gradient
	Channel num: 3	Cofor Transfer	CH1 Gradient
	Speed: 10		CH3 Gradient
Default		CH4 Gradient	CH5 Gradient
Delault		CH6 Gradient	

IC model: Loading lamp IC (click to enter the list and select a model)

DMX	DMX 500KB	DMX 750KB	G58206
UC51903	SM16703	TM1804	G58208
UC55603	SM16714	TM1913	W52811
UC58904	SM16813	TM1914	WS2810
UCS9812	SM16803	TM1814	P9883
UCS2603	SM16804		

Channel Number: Click 1-6 to switch.

Speed: Click 1-16 to switch.

1.1 Built-in Effect

			Jump from channel	Ramp from
		-	to channel	channel to channel
	Flash Test	Count Dimming	All jump	All ramp
IC: DMX	Color Change	Color Gradient	Shift from channel	Channel 1 ramp
	All Change	All Gradient	to channel	chamerrramp
Channel num: 3	Color Transfer	CH1 Gradient		
counts 10		CH3 Gradient	Channel 2 ramp	Channel 3 ramp
aperu: 10	CH4 Gradient	CHS Gradient	Channel 4 ramp	Channel 5 ramp
	CH6 Gradient		Channel 6 ramp	

1.2 Channel test (overall test of lamp pixels)

	Flash Test	Count Dimming
IC: DMX	СН1	CH2
	CHB	CHE
Channel num: 3		CHE
Speed: 10	All Bright	All Block

Channel 1	Channel 2
Channel 3	Channel 4
Channel 5	Channel 6
All ON	All OFF
Brightness: 255 (0-25)	5 adjustable)

1.3 Pixel counting function

Pixel Number: (adjustable range)

Current Pixel: Change with test

Maximum Pixel: Set to 1-1024 ("-"/"+" to adjust) before testing

Port Number: (adjustable range)

Current Port: Change with test

Maximum Port: Test port 1-640 ("-"/"+" to adjust)

Manual Count: Manually click test (check to enable)

Auto Count: Automatically test (check to enable)

Without Track: Single-point scan test (check to enable)

With Track: Click drag test (check to enable)

Pixel-by-Pixel: Test by pixel (test the next port after completing test of one port) (check to enable)

Port-by-Port: Test by port (overall test of port lamps) (check to enable)

Flash	Test	C	ount	Dimming
Spot num :	- No	w Num 1	Real Max 1024	+
Port num:		w Num	Real Max 640	÷
Manua	Count		Auto Cou	
🖂 No tr	avel		Have trav	rel
By spo	t 🗌 By p	ort C	By spot+	port

Pixel-by-Pixel + Port-by-Port: All ports set are tested at the same time (check to enable)

1.4 Static dimming (cannot be saved)



Brightness of each channel: Temporarily change the color between 0 and 255 (click the color bar to modify; or click the number to pop up a numeric keyboard to enter the value).

Color temperature adjustment: 1000K-9300K

Note 1: Brightness adjustment for temporary dimming is not used as a fixed channel brightness adjustment. Note 2: Built-in effects will pause during brightness adjustment of channels.

*2. DMX settings



③DMX parameters



2.1 Number

Write address		Test address	DMX parameter
Ch space			
- 3	de de la	Manual test	Reissue
(0-255)			
Sel contri			e <u>– E</u>
- 0			
(0-200)			
Sel port		Auto lest	
- 0	+		
Sel port	4	Auto test	fart test

START CH: *(1-4096)---(click "+"/"-" to switch).

CH MODE: * ((0-255)---(click "+"/"-" to switch).

Controller ID: All controllers (1-80) (click "+"/"- to switch").

PORT NUM: All ports (1-16) (click "+"/"- to switch").

IC: Click to select the chip

Write Address: Click to start writing

Note: Chip list

UCS512-A/B	SM1651X-3CH	TM512AB	GS851X
UCS512-C	SM1651X-4CH	TM512AL	Hi512X
UCS512-D	SM17512	TM512AC	QED512P
UCS512-E	SM1752X/17500	TM512AD	Hi512A0
UCS512-F	SM1852X	TM512AE	
UCS512-G			

2.2 Test DMX address

Write address		Test address	DMX paramete
Ch space			
- 3		Manual test	Reissue
(0-255)			
Sei contri		and the second se	e (†
- 0			
(0-200)			
Sel port		Auto test	
0	1		
(0-16)			Start test

CH MODE: * ((0-255)---(click "+"/"-" to switch).

Controller ID: All controllers (1-80) (click "+"/"- to switch").

PORT NUM: All ports (1-8) (click "+"/"- to switch").

MC Test: Click to test manually (click "+"/"-" to switch).

Compensate Mode: Click and the controller will send signal continuously

AC Test: Click to test automatically (click "+"/"-" to switch).

2.3 DMX parameters (only for use by professionals)

Vrite address	Test ad	dress	I D	MX para	mete
-				W	
- 3	+	Manual te	1	2	
(0-255) el contri			4	5	
- 0	1		7	8	
el port		Auto tes	EN123	0	I
0 (0-15)			Start te	st	
s: 0 is all ID!					
9					
9					
UC5512-C4	SM17512	TM512	PAC	GS85	1X
UCS512-C4 UCS512-CN	SM17512 SM1752X	TM512 TM512	PAC	GS85 Hi512	1X 2D
UCS512-C4 UCS512-CN UCS512-D	SM17512 SM1752X SM17500	TM512 TM512 TM512	PAC AD	GS85 Hi512 QED51	1X 2D 12P
UCS512-C4 UCS512-CN UCS512-D UCS512-E	SM17512 SM1752X SM17500 SM1852X	TM512 TM512 TM512	AC AD AAE	G585 Hist2 QED51	1X 2D 12P
UCS512-C4 UCS512-CN UCS512-D UCS512-E UCS512-F	SM17512 SM1752X SM17500 SM1852X	TM512 TM512 TM512	AC AD AE	GS85 Hista QED51	1X 2D 12P
UCS512-C4 UCS512-CN UCS512-D UCS512-F UCS512-F	SM17512 SM1752X SM17500 SM1852X	TM512 TM512 TM512	AC AD AE	GS85 Hi512 QED51	1X 2D 12P

1. Click the IC model in the IC list. For example, click "UCS512-E*" and it displays as shown in the figure below:

Transfer num 1	Set self channel number
No signal status Save last frame	Self channel num 3 Set
Color number 3	
Power on light gray	Current Level
255 255 255 255	16 16 16 10
Set	Set

2. Select the IC parameters to be changed, and click "SET" to complete settings.

***3.** Auxiliary functions



3.1 Set slave ID:

1.1 Set the start slave ID and click "SET".

9		
Slave ID	1	(1-200)
	Set	

1.2 Start setting the ID and feed back the ID information.

Now is setting,need more 15 sec	Set ok1,last ID is1 .
关闭	关闭

1.3 Complete setting and click "Close".

3.2 Network configuration: Set the signal transmission rate 1000-BASE or 100-BASE adaptive / forced 100-BASE

Line config	100M network	 Line config	Self-adaption	
	Set		Set	
	the second s			

- 1. Select the required signal transmission rate.
- 2. Confirm the selection and click "SET".

3.3 Packet loss rate test

1. Set the start slave ID and end slave ID (A maximum of 20 controllers can be tested at the same time)

Start ID	1	(1-200)
End ID	20	(1-200)
Tips: En	d ID - Start	ID <=19
Clear	Test	

2. Click "Test" to view the test data

ID:1	lose rate 0%
ID:2	lose rate100%
ID:3	lose rate100%
ID:4	lose rate100%
ID:5	lose rate100%
ID:6	lose rate100%
ID:7	lose rate100%
ID:8	lose rate100%
ID:9	lose rate100%
ID:10	lose rate100%

Packet loss rate is 0%: Data connection is normal.

Packet loss rate is 1-99%: Data connection is abnormal.

Packet loss rate is 100%: Data connection is completely disconnected.

3.4 Online status test: Test whether the controller is online

1. Click "Query"



2. View data

	online
1D:2	offline
ID:3	offline
ID:4	offline
ID:5	offline
ID:6	offline
ID:7	offline
ID:8	offline
10:9	offline
ID:10	offline

*4. System parameters

Master ID 1	(1-40)	UID	XB2115621862
(192.168.60.49)	Remote encryt	No encryt
🗌 LAN Master		Open number	Unlimited
Modbus ID 4	(((.240)	Master version	v8.6
		Screen Version	v1.9.7
Bluetooth Open	26 Cose	2022-06-21 17:1	9553 561
Cycle SYNC Close	Rogerti	Wels mode	Single Master
Set Login	Power ón possward	Language Server sei 🕑	Chinese 🗹 English Serv3.0 🗍 Serv4.0
	Master ID 1 (192.166.60.49 Leth Mastar Modbus ID 1 Bluetooth Open Cycle SYNC Close Set Login	Master ID 1 (1-40) (192 168 60.49) Get Master Modbus ID 1 (17-249) Bluetooth Open 45 Close Cycle SYNC Close Reset R Set Login Posetrion password	Master ID 1 (1-40) UID (192.168.60.49) Remote encryt UNN Master Open number Modbus ID 1 (1-240) Modbus ID 1 (1-240) Bluetooth Open A6 Close 2022-06-21 17:1 Cycle SYNC Close Reset It Work mode Set Login Poweron assiverit Server set 2

1. Set Master ID

When multiple master controllers are cascaded in the same network, the controllers shall be set with different IDs (IPs)

Master ID	1	(1-40)
	(192.168.60.49)	
Ö	LAN Master	

Note: ID must be unique.

1.1 LAN Master Controller: When multiple master controllers are cascaded in the same network for synchronization, one controller is set as the master controller of the LAN, and others are the slave controllers. These slave controllers display "controlled by the first master controller" during synchronization.

2. Modbus Address (1 by default)

When a third-party device/software controls the master controller, the Modbus address (1-240) of the controller shall be set.



3. Bluetooth Switch (turned on by default)

Click to switch - Enabled/Disabled



4. Cycle SYNC (cycle the programs in case of GPS synchronization)

Cycle SYNC Close Enabled/Disabled

5. Factory Reset



After inputting the password in the password box, click "Set Password" (1-6 digits, remember the password) to set the lock screen time.

New password		Set encrypt
Locker time	4	(minute)
	Set	

After setting the lock screen, there will be a lock logo in the play interface, and you need to enter the password to enter the playback interface after the lock screen is enabled.

đ	2022-06-2	Logi	in		
		密码		×	
	Login	1	2	3	
		4	5	6	
		7	8	9	
		EHF8	0	御定	

6. Set Lock Screen:

- (2) Remote Encryption Status: No encryption/Level 1 encryption/Level 2 encryption
- ③ Boot Times Encryption: No encryption/remaining boot times
- (4) Master Controller Version: Hardware version of master controller
- (5) Large Screen Version: Software version of large screen
- 6 Controller Time Calibration (GPS synchronization)
 - 2022-06-21 17:20:43 Set
- (7) Work Mode: Single/master (the selected mode takes effect after restarting the controller; the

single mode applies to 809D)

(8) Language Selection: Chinese/English (the selected language takes effect after restarting the

controller)

(9) Cloud Controller Selection: Cloud Controller 3.0/4.0 (3.0 is selected by default)

Server sel 🕑 Serv3.0 🗍 Serv4.0

8. Boot Encryption (see attachment)

VII. Specific parameters

Memory card:

Type: SDHC card

Capacity: 4GB-32GB

Format: FAT32

Storage file: *.BIN

Physical parameters:

Operating temperature: -10°C~60°C

Operating power: AC110-240V

Power consumption: 10W

Weight: 2.0 Kg

Data interface: Network interface

UID	XB2115	621862
Remote encryt	No encryt	
Open number	Unlimited	
Master version	v8.6	
Screen version	v1.9.7	
2022-06-21 17	20:43	Set
Work mode	Single	🖂 Master
Language 🗌	Chinese	🕑 English
Server sel 😔	Serv3.0	Serv4.0

	<u> </u>		
 	-		
			0mm
		0 0	A

E



VIII. SD card formatting

1. Before copying files to the SD card, the SD card must be first formatted. (Note that it must be formatted before each copying).

- 格式化 可移动硬盘 (H:) × 容里 (P) 2. Format program file forma 7.39 GB -+未筑€ 1) SD Card Settings - "File System", "FAT32". FAT32 (默认) -分配单元大小(4) Default 默认配置大小 2 SD Card Settings - "Allocation Unit Size", click the configuratio size [还原设备的默认值@] drop-down button to select "Default configuration size" or 卷标 (L) click "Restore default value of device". 可移动硬盘 格式化选项 (0) ③ Start formatting. ☑ 快速格式化 (Q)] 创建一个 MS-DOS 启动盘(M) As shown in the figure below: 开始(S) 关闭(C)
 - 3. The SD card cannot be hot swapped. It can only be plugged and removed after powering off the controller.

IX. Precautions:

1. The maximum cascade between each two nodes (between controllers, between controller and master controller, and between controller and computer) can be 100 meters using CAT5 or above network cable.

Beyond this distance, switches or optical fibers can be added for long-distance transmission.

2. The crimping method of network cable is 568B direct connection.



Orange white-1, orange-2, green white-3, blue-4, blue white-5, green-6, brown white-7, brown-8

Version No.	Issue time	Revision history
V2.1	/	/
V2.2	2022/5/12	Device updated, added lock screen
		and encryption functions