MR-WT33 Touch DMX Addresser

Version: V2.1

MingRui Technology Co., Ltd.

Revised Date:2024/07/31

In the field of landscape LED control, the DMX512 drive mode is very popular in the application of LED lamps. Due to the particularity of the DMX512 protocol, the DMX512 protocol used in LED lamps must be addressed and the DMX512 channel address on a single branch should be reasonably allocated.

The MR-Control system introduces the MR-WT33 handheld addresser, which can quickly and easily write addresses for DMX512 addresses, and supports internal test animation to verify the written DMX512 addresses.

MR-WT33 handheld addresser supports SD memory card, which can store multiple scene files of offline data, and supports multiple scene loop playback, and the specified playback of a single scene.

It can simulate the DMX512 console, can send channel data for any channel 1-512 in the DMX512 channel, and can be used as a simple DMX512 console.

Support a variety of quick test methods, can be used for lamps running point, color change and other test modes to verify the addressing of lamps.

Support MR Series chip parameter setting, current output adjustment, brightness adjustment, and firmware upgrade.

With the color palette function, you can select a certain color value in the color palette for control, and support a variety of four-color modes.

The MR-WT33 handheld addresser is powered by a built-in lithium battery and supports Type-c interfaces and DC6-24V in-line power supply.

Overview

1. MR-WT33 Device Can Set The Number of Loaded Channels, Baud Rate, Playback

Speed, Color Number and Other Parameters;

2. With 1-Port DMX512 Signal OutPut, Addressing Signal Support Differential Mode;
3. With 1-Port TTL Signal OutPut, Support Single-Wire and Dual-Wire Chip Driver Chip;
4. Support OutPut 2M Clock Frequency and 6144 Channel Load;
5. You Can Specify The Starting Channel, The on-Load Channel of a Single Chip, and The Lamp Number, and Verify the Address Through Automatic/Manual Test Mode
6. The Device Has a Variety of Built-in Test Animation Effects, Such as a Variety of Color Gradient, Automatic/Manual Running pPoint, Overall Gradient and Other Effects;
7. Support Brightness Adjustment, Single Channel Brightness Adjustment Function;
8. With an SD Card Slot, Support SD Card to Store Animation Data, and Can Specify a Play Scene, Playback Speed Can be Adjusted;
9. Support Gamma Correction Adjustment Settings and Positive and Negative Direction Data OutPut Settings;
10. Can Simulate DMX512 Console, for DMX512 Channel 1-512 Channel Arbitrary Send Channel Data, Can be Used as a Simple DMX512 Console;
11. Support Standard RDM Protocol, Can Search RDM Lamps, Static dDetection, Write DXM512 aAddress by UID and Other Functions;
12. Support Parameter Setting, Current Output Adjustment, Brightness Adjustment and Firmware Upgrade for MR Series Chips;
13. With The Function of Color Palette, You Can Select a Certain Color Value in The Color Palette to Control, and Support a Variety of Four-Color Modes;
14. Built-in 3350mAh Lithium Battery as Power Supply Equipment,And Supports Type-c

Port and DC6-24V in-Line Power Supply;

15. Support a Variety of DMX512 Chip Address,Support MR, UCS, SM, TM, HI, HM, GS, Custom DMX Chip, etc.;

16. Support offline Firmware Upgrade and Touch Screen Firmware Update;

17. Support Multi-Language Switching Mode.

Specifications and Parameters

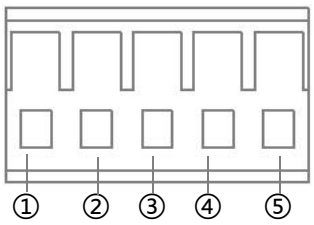
I. Controller Appearance

① Touch Screen ② Power Switch ③ SD Card ④ DC6~24V

⑤ Type-C Interface ⑥ DMX512 Signal Output ⑦ TTL Signal Output

II. DMX512 OutPut Port Definition

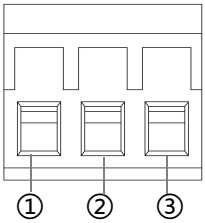
5Pin Terminals Sort Sequentially From Left to Right, As Shown Below:



	①	②	③	④	⑤
DMX Signal	GND	Data+	Data-	NC	Addressing+
	GND	A	B	NC	ADRI/PO+

III. TTL OutPut Port Definition

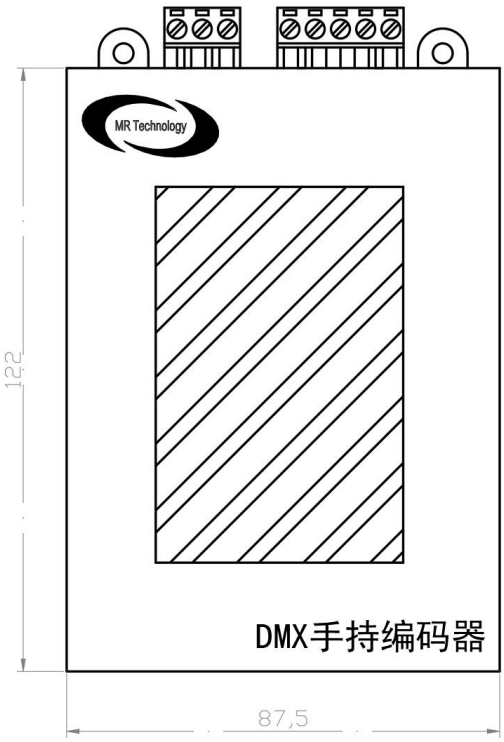
3Pin Terminals Sort Sequentially From Left to Right, As Shown Below:



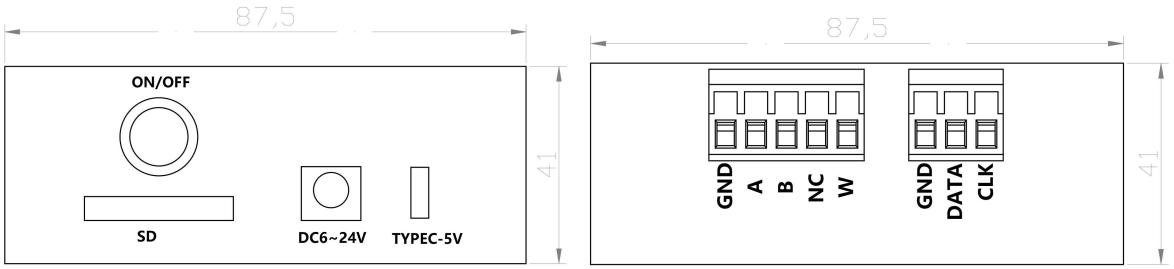
	①	②	③
TTL Signal	GND	DATA	CLK
	GND	DATA	CLK

IV. Controller Three View Size Chart

MR-WT33 Front View:



MR-WT33 Two Side View:



Remark：Above Three Views The Size Unit is mm.

V. Basic Parameter Table

Product Name	Touch DMX Addresser
Product Model	MR-WT33
A Storage Medium	High-Speed SD Card (Standard)
Rated Power	About 5W
Touch Screen	3.5 "Resistive Touch LCD Screen
OutPut	DMX512/DMX512-A/RDM
Relative Humidity	About 95% (Non-Condensing)
Temperature	-40℃～80℃;
Length	122mm
Width	87.4mm
Height	41mm
Capacity of battery	Lithium Polymer Battery /3350mAh
Power Supply Mode	Type-C Power Supply and DC Power Supply
Power Supply Input	DC 6.0~24V，Max 2.0A
Shell Material	Iron (Dusting Process)

Accessories	SD Card x1//DC Headx1/Warranty Card x1/Foam Paper Box x1/Screwdriver x1

Touch Screen interface and Functions

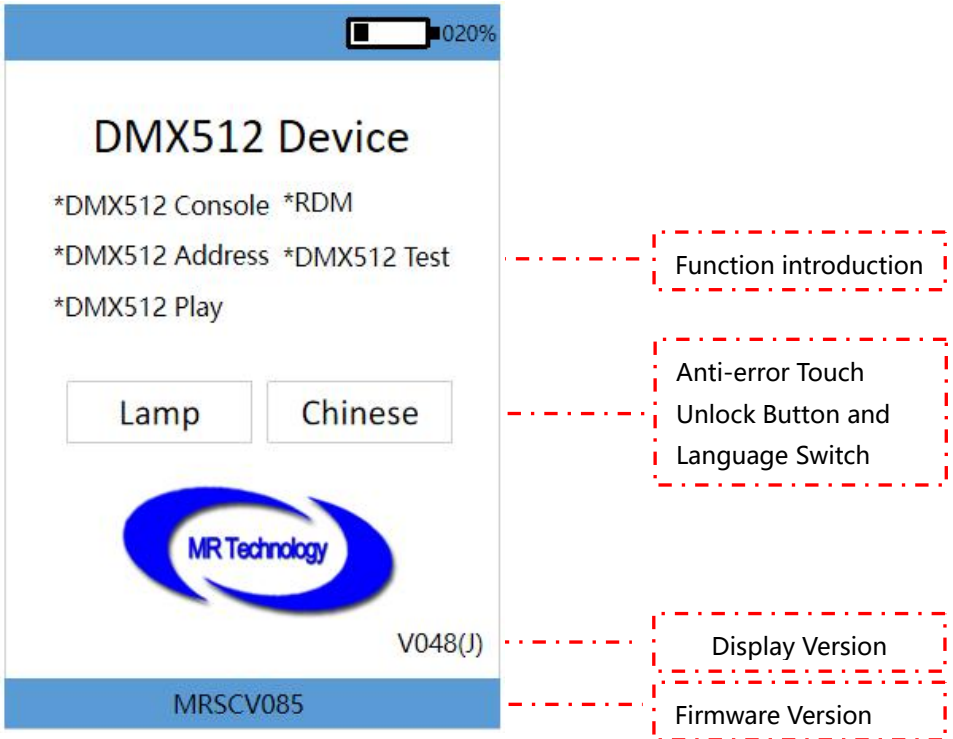
I. Boot Screen

Press the power supply switch on the right side of the bottom of the handheld addresser to complete the startup operation. The following information is displayed:

1. Brief introduction of equipment functions;

2, anti-touch unlock button and language switch;

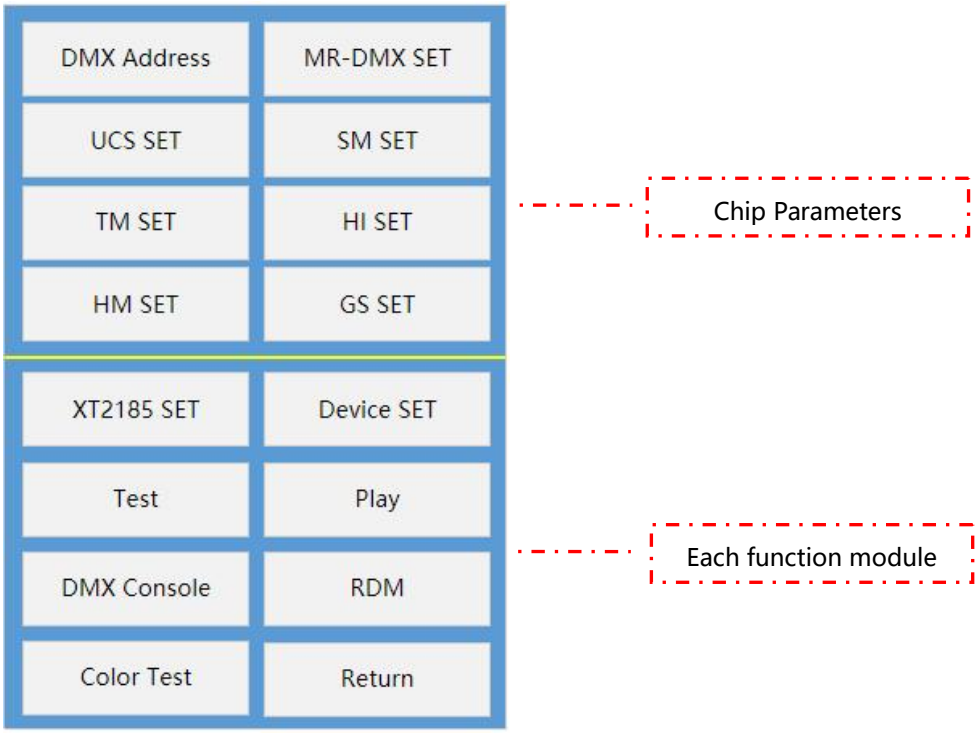
3, display version number;



Note: To Switch The Language Interface, Click The Button and Then Click The Device Unlock Button to Take Effect.

II. Screen Unlock

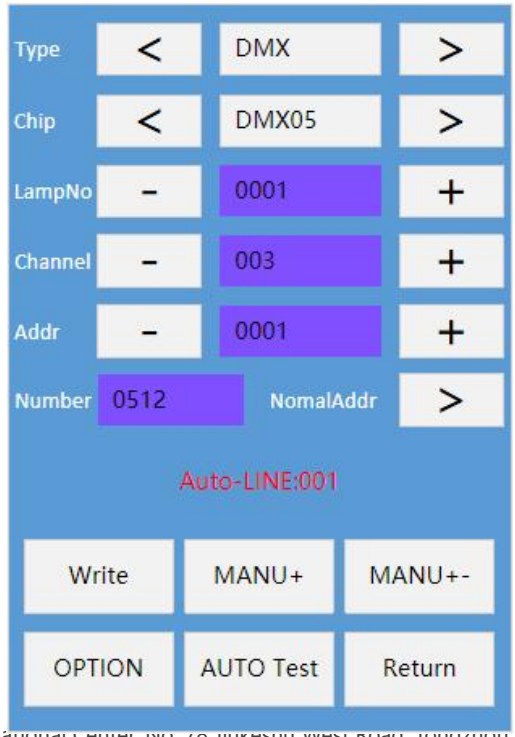
Click The Device Unlock Button to Enter the Main Operation interface of the Handheld Device, as Shown Below:



III. Function Module Description

I. Write The Address

Click "Write Address" in The Main Operation interface, You Can Enter The interface of Writing Address, as Follows:



Type: DMX is Selected by Default. Press the Two Buttons of "<" or ">" to Switch to Select The Corresponding Chip Type. Currently, The Supported Types include DMX,

Chip:

DMX Support Chip: DMX05、DMX05_JDQ、DMX02、SL_DMX01、QED512P、LX5123、LX5124、WX512、WX512 Start、WX512 Stop;

UCS Support Chip: UCS512A、UCS512B、UCS512C、UCS512C4、UCS512CN、UCS512D、UCS512E、UCS512F、UCS512G6、UCS512H4、UCS512KH、UCS512KL。

SM Support Chip: DMX512AP、SM16512、SM16511、SM16522、SM17511、SM17512、SM17522、SM17500、SM17500_A、SM18522P、SM18522PH、SM18512P、SM19522PG、SM19522PHG;

TM Support Chip: : TM512、TM512AC、TM512AL、TM512AD、TM512AB、TM512AE;

HI Support Chip: : HI512A0、HI512A0Zi、HI512A4、HI512A6、HI512D、HI512E;

HM Support Chip: : HM512G、HM512GH、HM512GF、HM612R;

GS Support Chip: : GS8512、GS8513、GS8515、GS8516;

LampNo: Lamp Number, Default Value is 1;

Channel: Number of Lamp Channels: The Number of Output Channels Provided by a Single Decoding Chip in The Lamp. The Default Value is 3. Click The Blue Block, Enter Through The Keyboard, and Then Click Enter to Complete The Value Setting;

Addr: The Starting Address Will be More Numbered and Channel Automatically Displayed;

Write Addr: Write Address Button, Select Parameters and Click This Button to Address;

AUTO Test: Automatic Test Button, Click to Automatically Run Point Test;

MANUTest- / MANUTest+：Click The Two Buttons to Perform The Manual Run Point Test;

Operation Status:：Address State, Automatic Running Point, Manual Running Point, etc.;

OPTION：

SM16512 Only，Special Functions of SM16512 Chip Are as Follows:

PoweronLGT：There are Four Options: OFF / 50% WHITE/ 100% WHITE/ 50% BLUE;

ChannelSel：Support 3/4 Channel.

SL-DMX01 Only，Special Functions of SL-DMX01 Chip Are as Follows:

Mode：OFF/08CH Mode /40CH Mode /36CH Mode /32CH Mode /01CH Mode /03CH Mode /04CH1 Mode /04CH2 Mode /05CH Mode /07CH Mode, Switch Using Buttons.

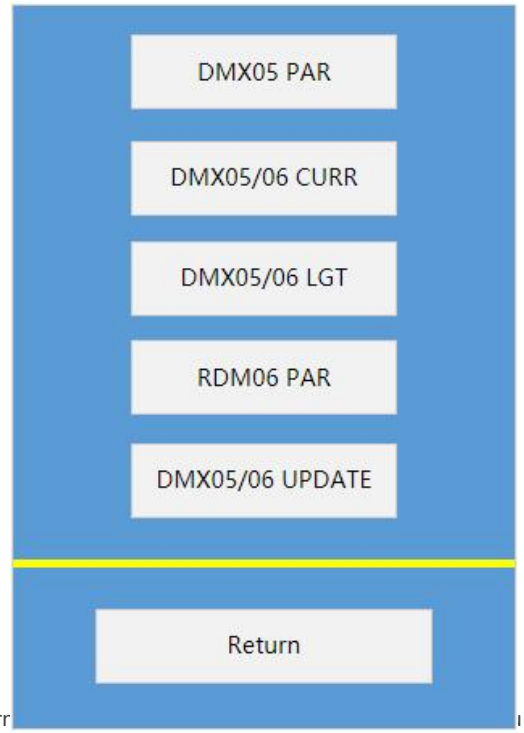
GS Only，Special Functions of GS Chip Are as Follows:

ChannelSel：Support 3/4 Channel；

Address: Set This Parameter Based on The Number of Chip Channels；

2、MR-DMX SET

Click "MR-DMX Chip Settings" on The Main interface to Enter The interface as Follows:



2.1 DMX05 PAR

Click "DMX05 Parameters" to Enter The interface of Writing DMX05, as Follows:

Parameters Are Described as Follows::

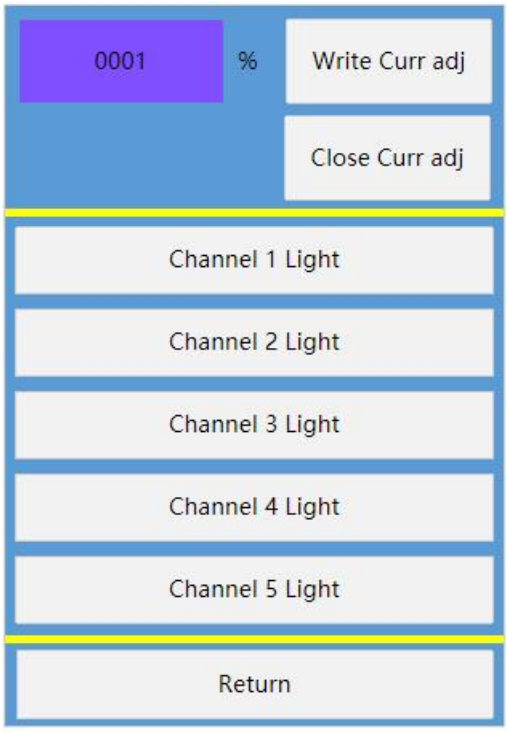
DMX05 Chip Parameter Table

Parameter	pecific Parameter Values	Note
Type Chip	PWM_OUTPUT UCS、SM、TM、MY、MBI Reference Chip Decoding	
Gray Scale Level	16Bit 32-65536 Level	
Rate of Refresh	PWM：60Hz-3840Hz	
DMX Channels	PWM：1-6 Channels SPI Decoding：100 Channels	

Parallel	Normal/Two Parallel/three Parallel//four Parallel
Serial Baud Rate	250KAuto:250K-1M
Polarity of output	High/Low
Chip Self Test	OFF/R→G→B/A Light on/ B Light on/ C Light on/ D Light on/ All Light on/7 Color/Fix Color/Last Frame/
Number of Colors	1/2/3/4
Power-on Queue	OFF/ON

2.2 DMX05/06 CURR

Click "DMX05/06 Current" to Enter The interface of DMX05/06 Current Gain Function, as Follows:

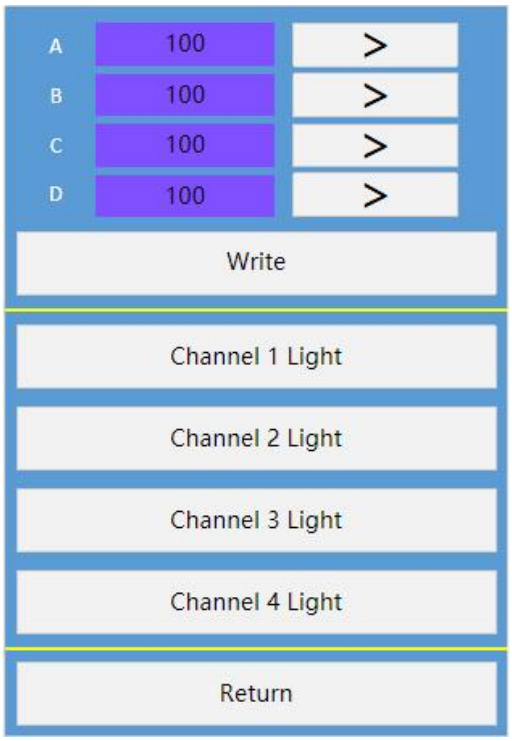


Click The Blue block to Modify The Percentage Value of Current Gain. Click Write.

2.3 DMX05/06 LGT

Click "DMX05/06 Brightness" to Enter The Brightness Setting of DMX05/06 Chip, as

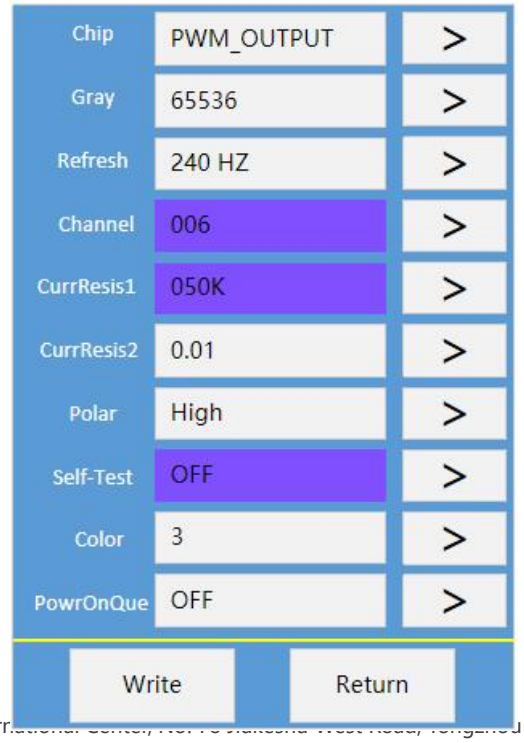
Follows:



Long Press The Blue Block, Enter The Channel Brightness Value, or increase it One by One Through The Button, Click Write to Complete The Setting.

2.4 RDM06 PAR

Click "RDM06 Parameters" to Enter The interface of RDM06 Parameters as Follows:



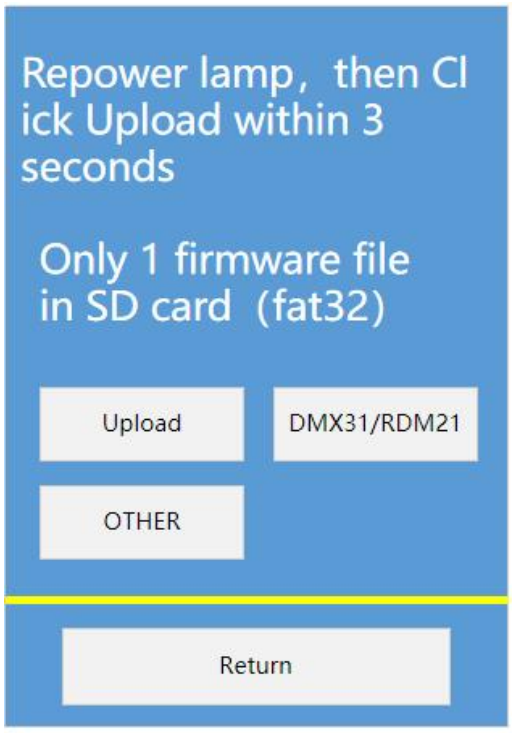
Parameters Are Described as Follows:

RDM06 Chip Parameter Table

Parameter	pecific Parameter Values	Note
Parameter	PWM_OUTPUT UCS、SM、TM、MY、MBI Reference Chip Decoding	
Type Chip	16Bit 32-65536 Level	
Gray Scale Level	PWM：60Hz-3840Hz	
Rate of Refresh	PWM：1-6 Channels SPI Decoding：100 Channels	
Resistance	050K	RDM item
Resistance of Current	0.01/0.05	RDM item
Serial Baud Rate	High/Low	
Polarity of output	OFF/R→G→B/A Light on/ B Light on/ C Light on/ D Light on/ All Light on/7 Color/Fix Color/Last Frame	
Chip Self Test	1/2/3/4	
Number of Colors	OFF/ON	

2.5 DMX05/06 UPDATE

Click "DMX05/06 Firmware Upgrade" To Enter The interface of Chip Firmware Upgrade, as Follows:



Points to Note:

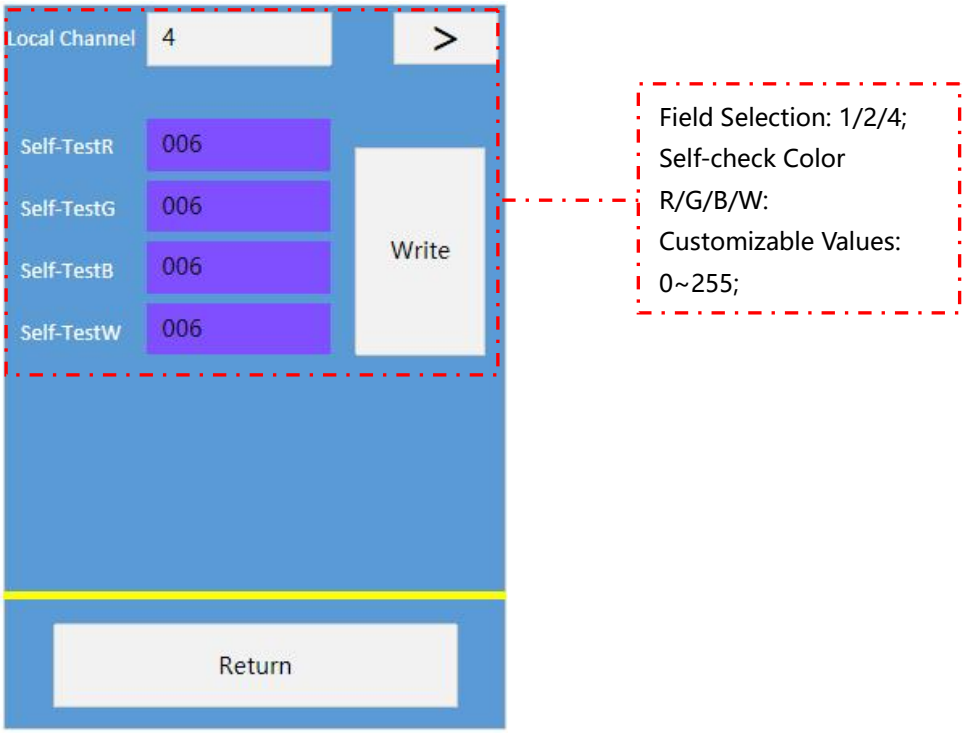
DMX05/06 Chip Firmware Upgrade, Click Upgrade Within 3 Seconds After Power-on.

3、UCS SET(Continuous Update)

Click "UCS Chip Settings" on The Main interface to Enter The interface as Follows:

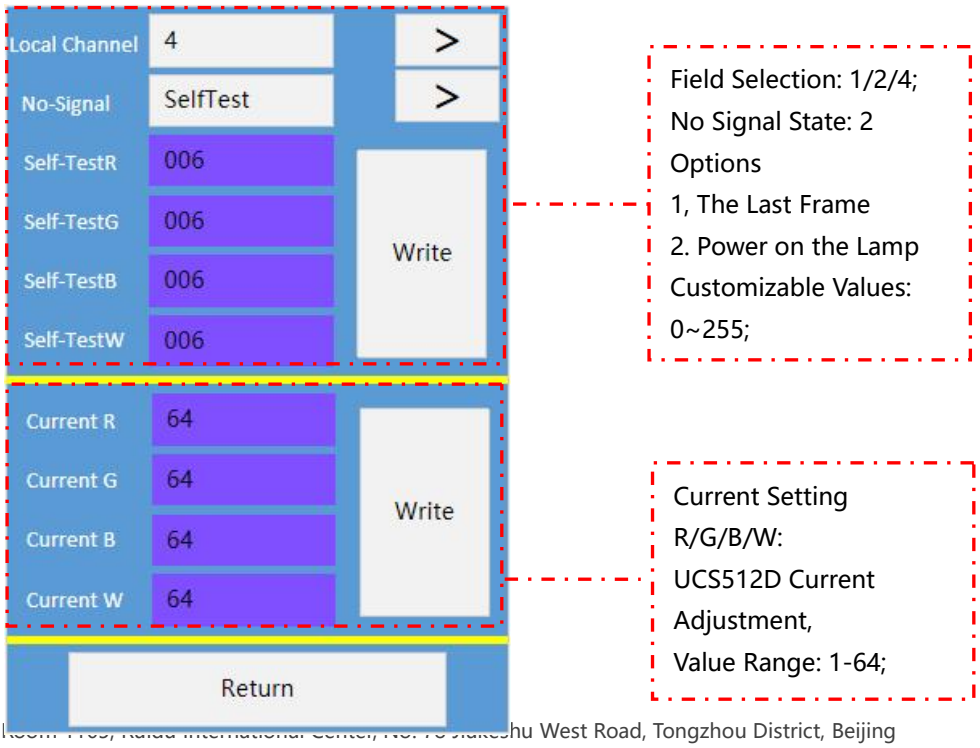
3.1 UCS512C4 SET

Click "UCS512C4 Chip Settings" To Enter The Setting interface as Follows:



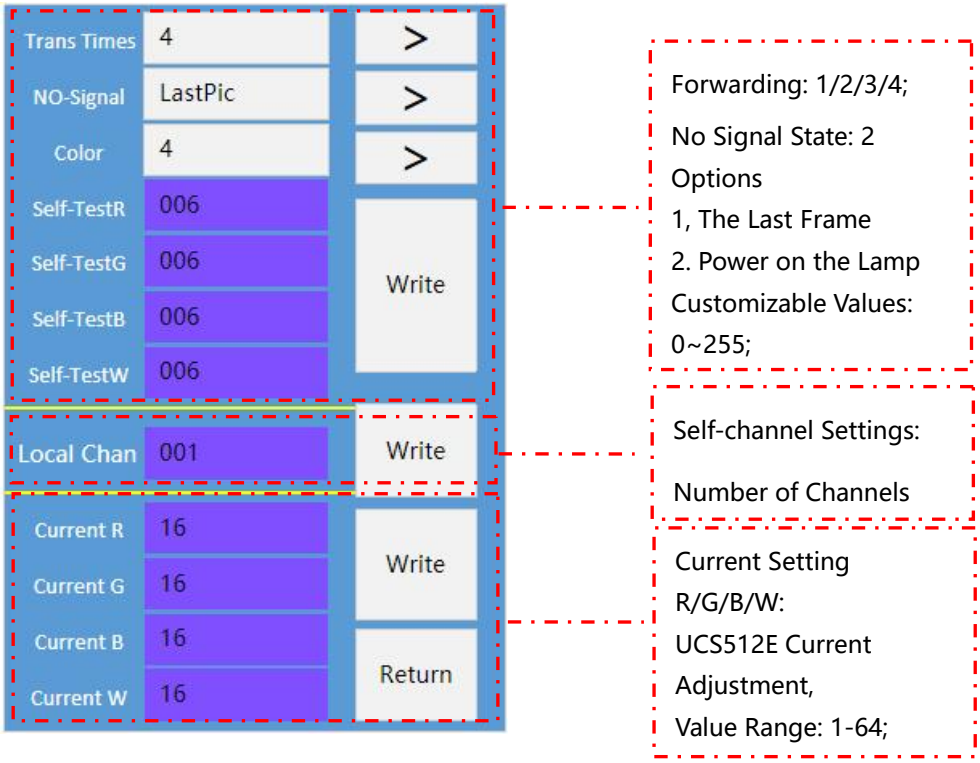
3.2 UCS512D SET

Click "UCS512D Chip Settings" To Enter The Setting interface as Follows:



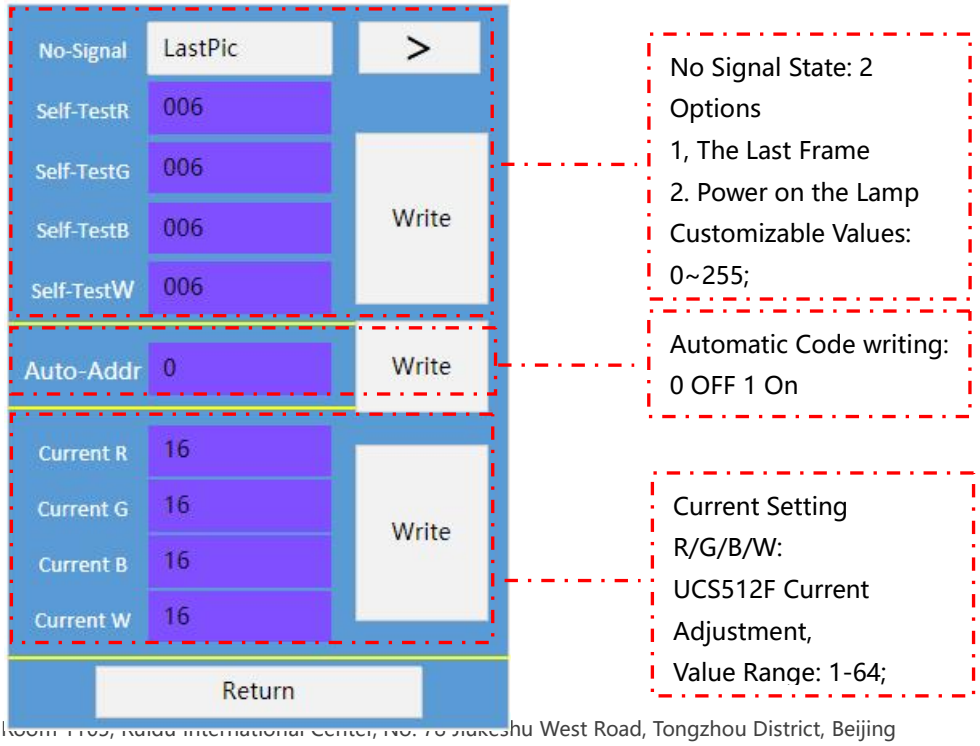
3.3 UCS512E SET

Click "UCS512E Chip Settings" To Enter The Setting interface as Follows:



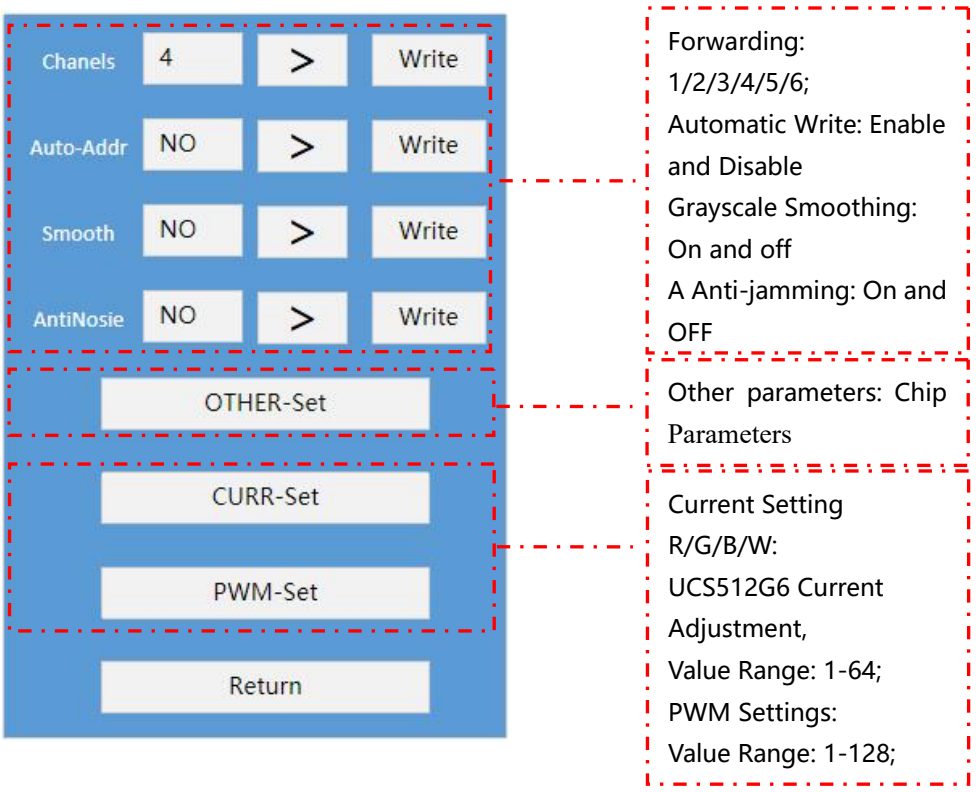
3.4 UCS512F SET

Click "UCS512F Chip Settings" To Enter The Setting interface as Follows:

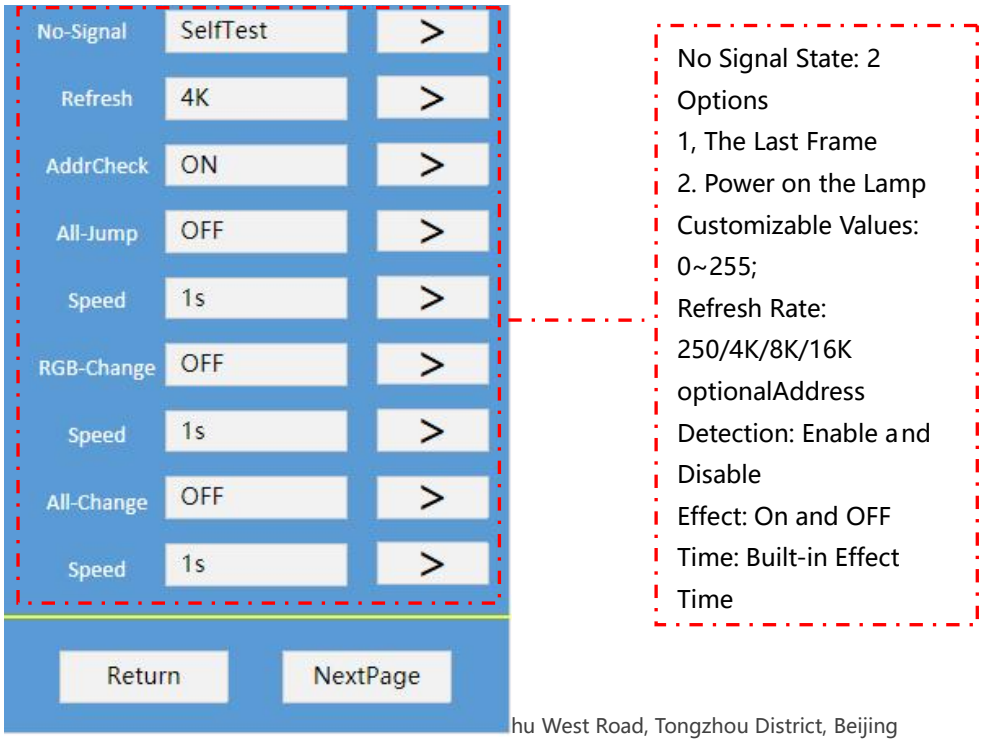


3.5 UCS512G6 SET

3.5.1 Click "UCS512G6 Chip Settings" To Enter The Setting interface as Follows:

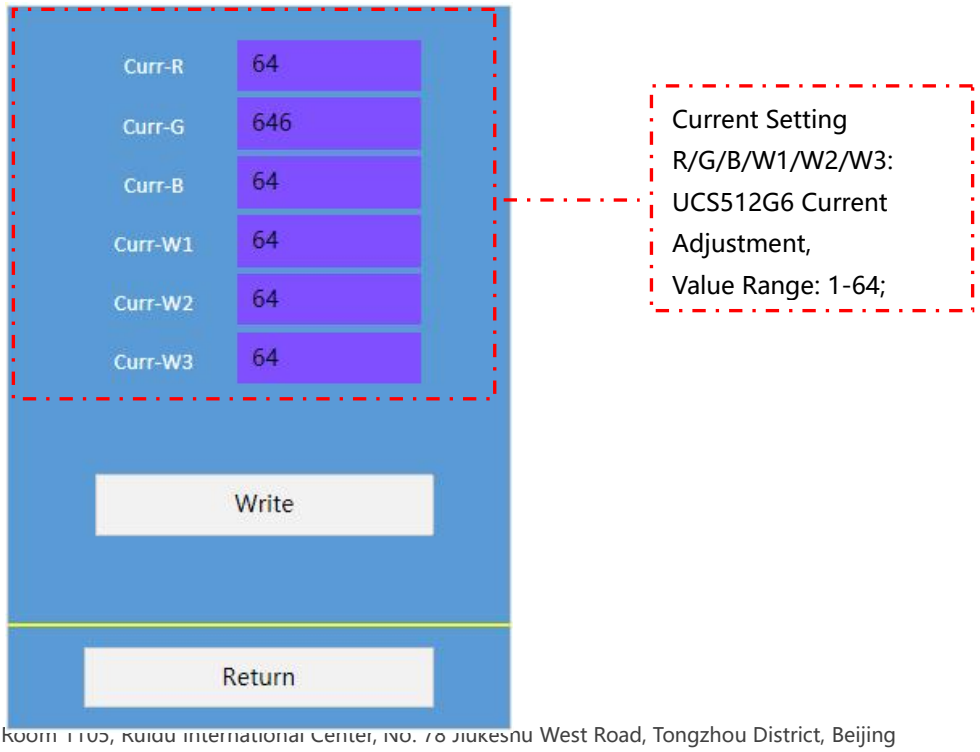


3.5.2 Click "Other Parameters" To Enter The interface for Setting this Function, as Follows:

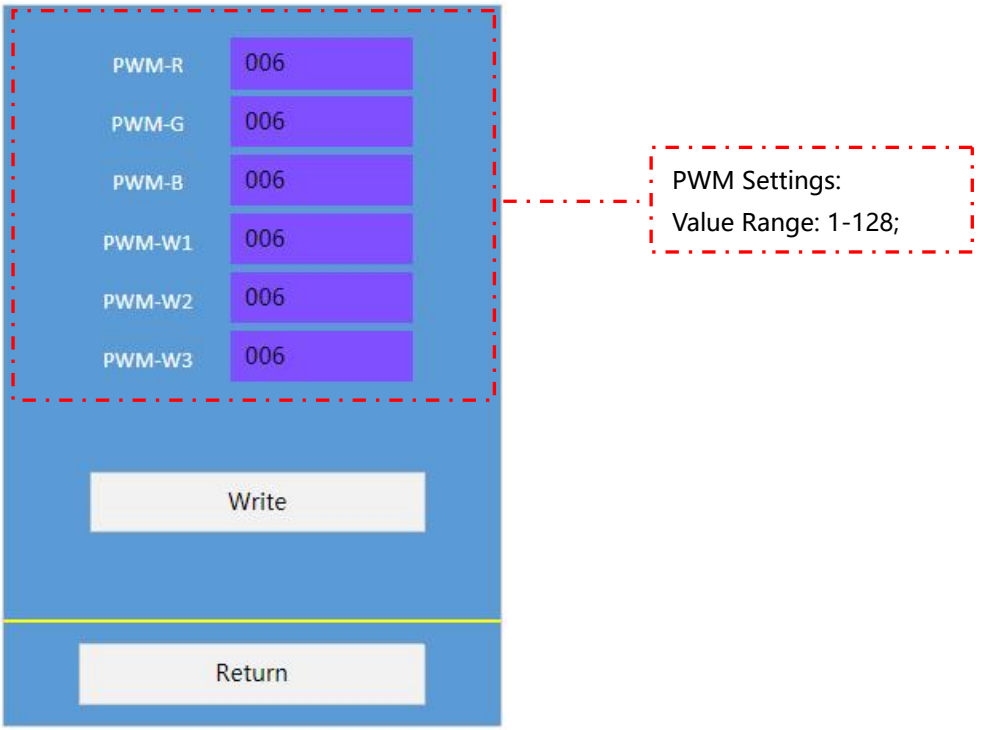


3.5.2.1Click "Other Parameters" To Enter The interface for Setting This Function, as Follows:

3.5.3 Click "Current Setting" To Enter The interface For Setting This Function, as Follows:



3.5.4 Click "PWM Maximum" To Enter The interface for Setting This Function, as Follows:

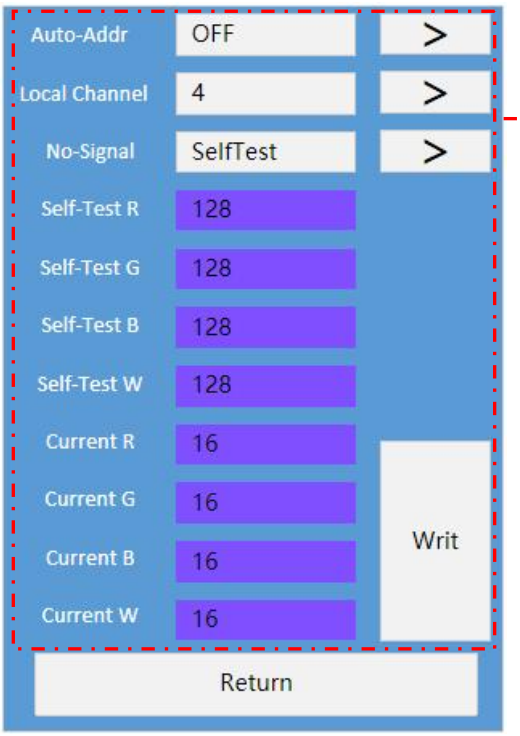


4、SM SET(Continuous Update)

Click "SM Chip Settings" on The Main interface to Enter The interface as Follows:

4.1 SM17511/2 SET

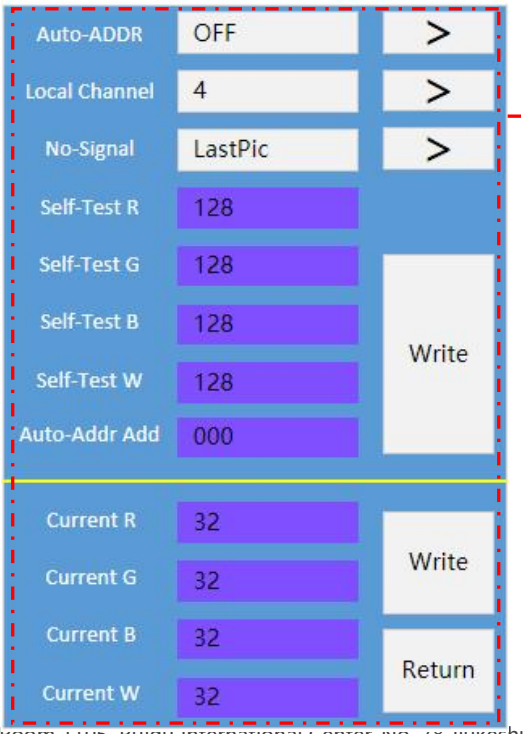
Click "SM1751/2 Chip Settings" To Enter The Setting interface as Follows:



Automatic Address Encoding: Enable and Disable
Channel: 1/2/3/4
No Signal State: 2 Options
1, The Last Frame
2. Power on the Lamp
Customizable Values: 0~255;
Current Setting R/G/B/W SM17512/2 Current Adjustment, Value Range: 1-16;

4.2 SM17522 SET

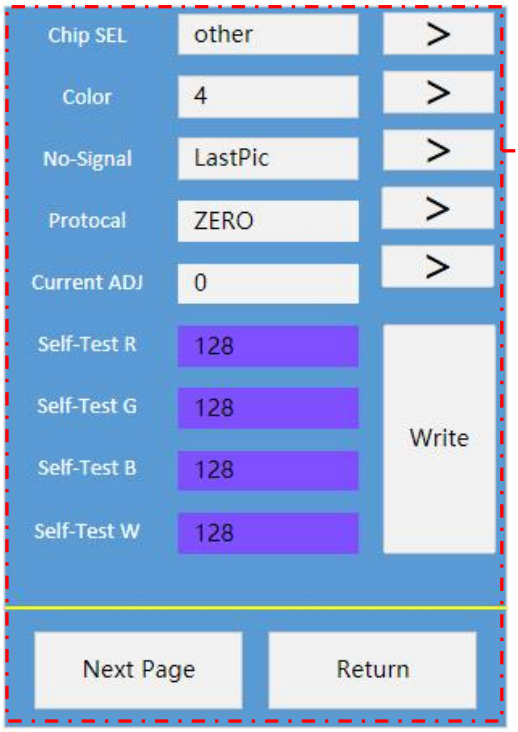
Click "SM17522 Chip Settings" To Enter The Setting interface as Follows:



Automatic Address Encoding: Enable and Disable
Channel: 1/2/3/4
No Signal State: 2 Options
1, The Last Frame
2. Power on the Lamp
Customizable Values: 0~255;
Self-channel Settings: Number of Channels;
Current Setting R/G/B/W SM17522 Current Adjustment, Value Range: 1-32;

4.3 SM17500 SET

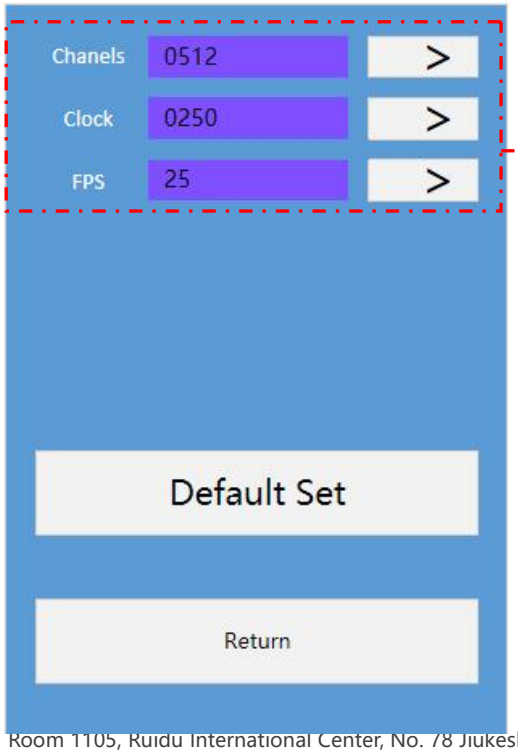
Click "SM17500 Chip Settings" To Enter The Setting interface as Follows:



Chip SEL: Other/SM16813
Color: Divided into 3/4
No Signal State: 2 Options
1, The Last Frame
2. Power on the Lamp
Customizable Values: 0~255;
Protocal: ZERO/DMX512
Current Gain Selection: Chip Channel Current Gain, Number
Value Range: 0/16/32/64;

5、Device SET

Parameter Setting Functions, including Load Channel, Clock, FPS, etc.Are as Follows::

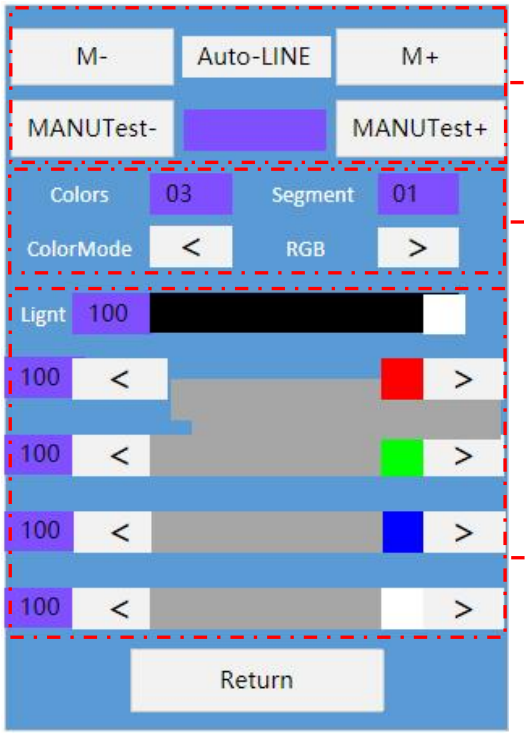


Chanels:
The Number of Loaded Channels Can be Modified to a Maximum of 6144 Channels.
Clock: Maximum 2Mbps
FPS: Default:25Hz, Which is Adjustable

Note: Restore The Factory Settings, Restore The Device Parameters To The Factory State.

6、Test

Click The Test Button to Enter The Test Module as Follows:



Test Effect in Automatic/Manual Mode

Code	M- | M+	Code	Manual - | Manual +
Auto-LINE	Run Some	Manu-LINE	Manual Running Point
Auto-RED	Gradient Red	Manu -RED	Manual Red Gradient
Auto-GREEN	Gradient Green	Manu-GREEN	Manual Green Gradient
Auto-BLUE	Gradient Blue	Manu-BLUE	Manual Blue Gradient
Auto-WHITE	Gradient White	Manu-WHITE	Manual White Gradient
Auto-CHING	Gradient Cyan	Manu-CHING	Manual Cyan Gradient

Auto-YELLOW	Gradient Yellow	Manu-YELLOW	Manual Yellow Gradient
Auto-PURPLE	Gradient Purple	Manu-PURPLE	Manual Purple Gradient
R→G→B→W→	RGBW Jump	——	——
R~G~B~W~	Multi Color Gradient	——	——
7Color mode0	Seven Color Gradient	——	——
7Color mode1	Colorful Flowing Water	——	——
7Color mode2	Colorful Tail	——	——
RGBW	Specify a Color Value	——	——

Note 1-1: The Part with -- in The Above Table Represents: Manual Mode is Not Supported in This Test Mode;

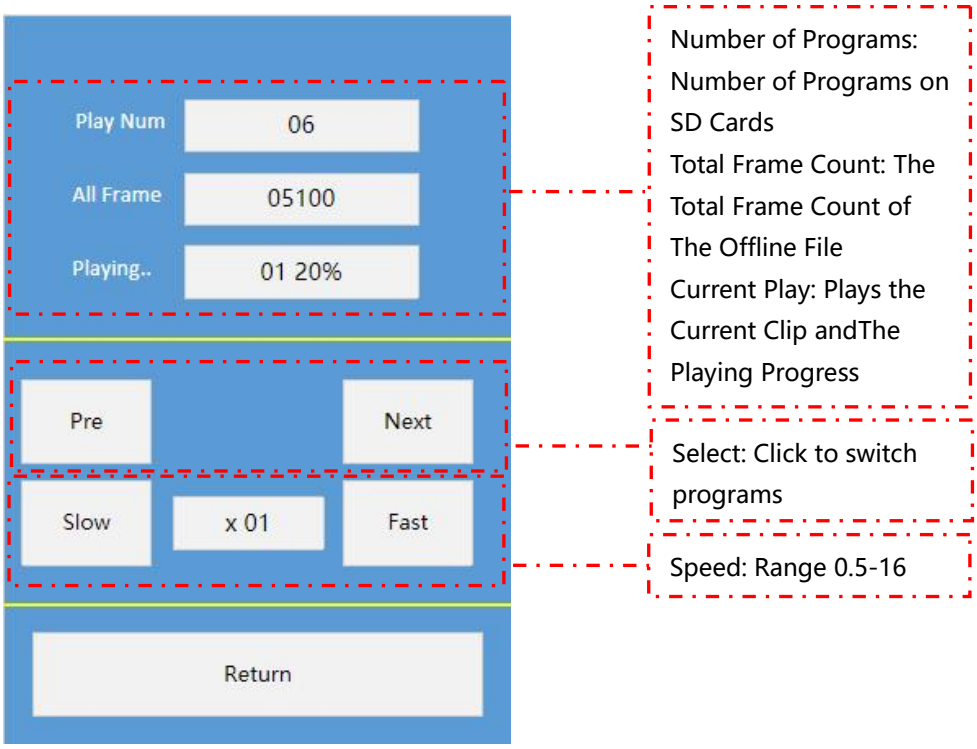
Note 1-2: RGBW Mode is The Specified Color Value Mode. When You Drag The Color Value of The Four Channels R/G/B/W in the interface, The Test mMode Will Automatically Switch to RGBW Mode;

Colors : Refers to The Number of Colors in The Animation Playing Mode. The Value Range is 1/2/3/4.

ColorMode： Support Color Selection, Such as R, RG, RGB, RGBW, Color Channel order Can be Freely Selected

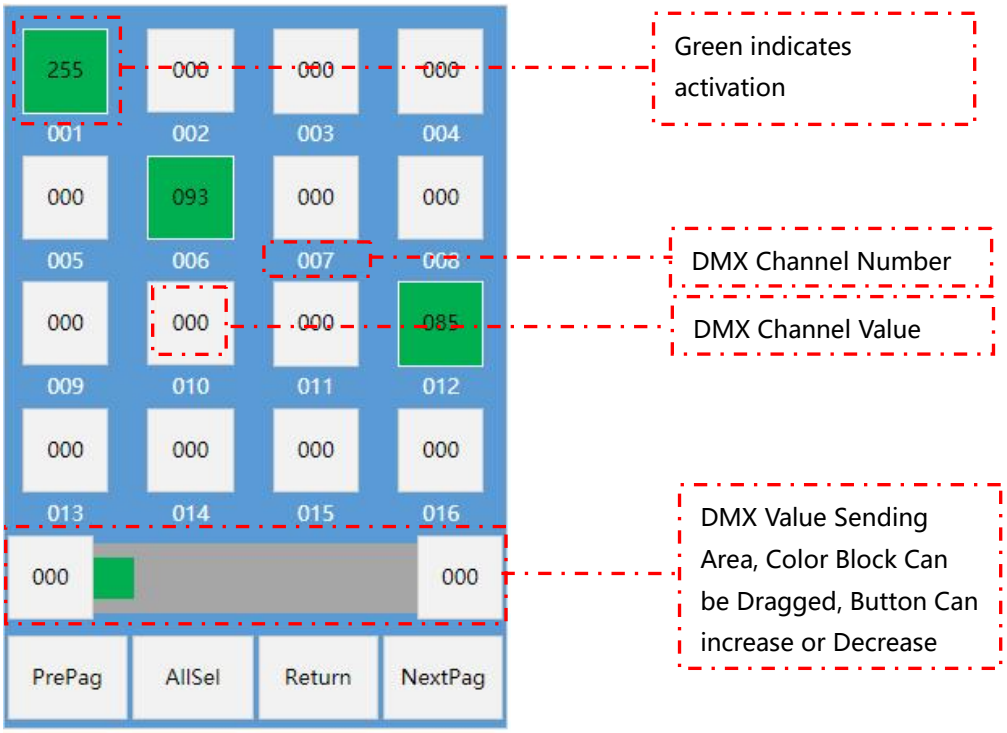
7、Play

Click "Play" on The Main interface to Enter The interface for Playing Offline Files in SD, as Follows:



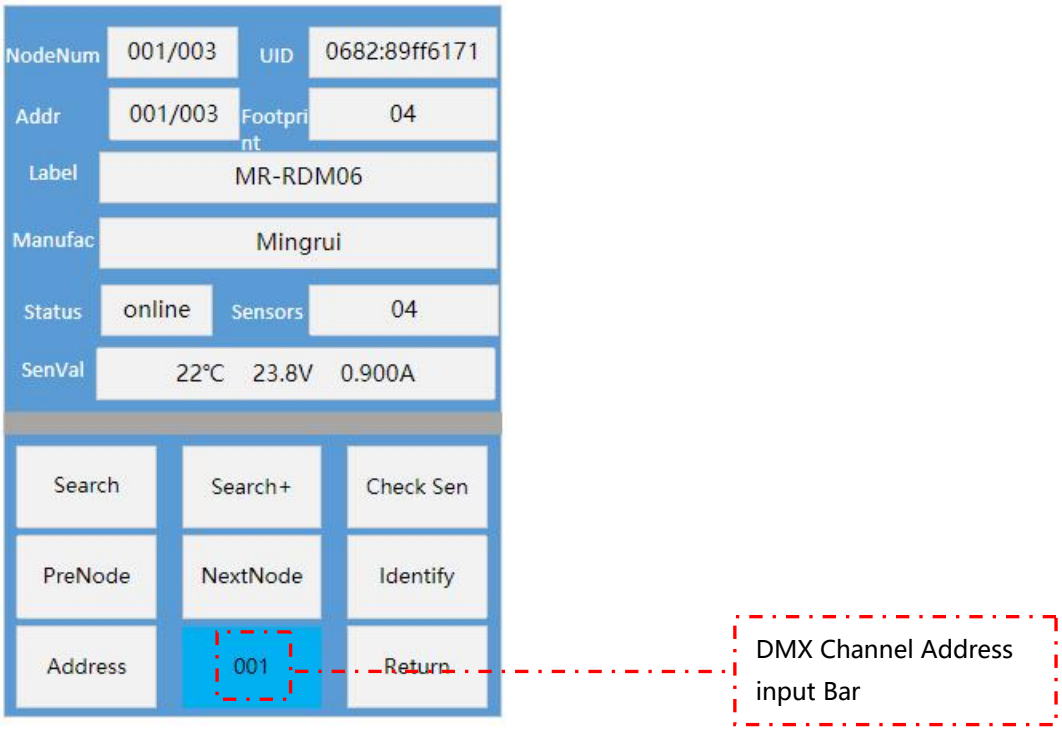
8、DMX Console

Click "DMX Console" on the Main interface to Enter The interface That Simulates DMX512 Console, as Follows::



8、RDM

Click "RDM" on the main operation interface to enter the interface for detecting and addressing RDM lamps, as follows:



NodeNum: MR-WT33 The Number of Equipment Carried and a Particular Equipment in The Format of 00X/00Y;

UID: Is The ID Code Given by The RDM Lamps at The Factory. This Code is The RDM Equipment Code and Has Uniqueness;

Addr: DMX512 Channel Address of The RDM Device;

Footprint: The Number of Channels of The RDM Device;

Label: Device Labels **Manufacturer**: Equipment Manufacturer information;

Status: Online and Offline Status of The Device **Sensors**: RDM Devices Probe Number;

SenVal: The Value Detected by The Probe, Temperature, Voltage, Current;

Search：Addressers Search RDM Devices;

Search+：After Searching for RDM Devices, Add RDM Devices and use incremental Search;

Check Sen：Non-Real-Time inspection of RDM Lamps;

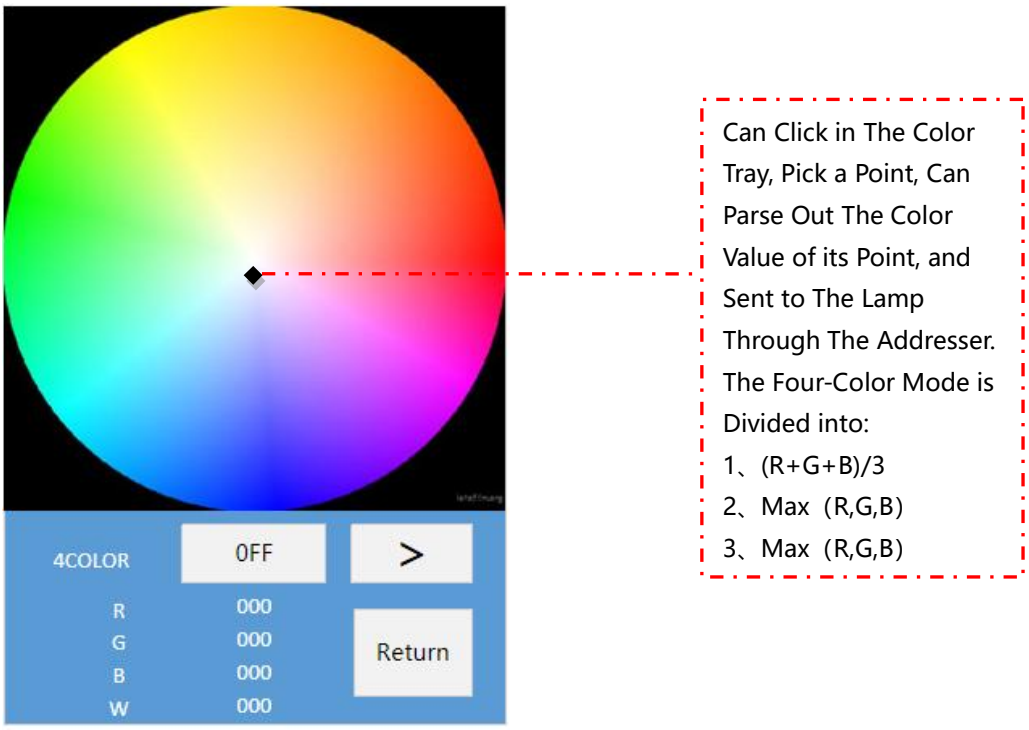
PreNode|NextNode：Select The RDM Device by Pressing The up and Down Buttons. The Number of Devices is Displayed in The Number of Devices;`

Identify：Light the Selected RDM Lamps;

Address：The DMX512 Channel Address of The Selected RDM Device is Specified by UID.

9、Color Test

Click "Color Drive Take Color" in The Main Operation interface to Enter The interface of Writing Color Drive Take Color, as Follows：



Effect Software Description

I. Animation Material

In the application of MR-WT33 handheld addresser, Simple LED software developed by

Mingrui Technology is adopted in the software part, which can adopt a variety of animation material production and import methods.

1. Intelligent template animation production: Use the intelligent animation template in Simple LED software to make a variety of relatively simple animation effects;

2, Simple animation: through simple animation Easy Maker in Simple LED software to make non-template simple animation, you can set the animation time value and animation color value;

3. Imported animation: For some projects that require high complexity of animation, Simple LED software can import animation materials produced by third-party professional animation software.

This part of the function can be referred to《Simple LED Software Specification V1.0》

II. Lighting Diagram Setting

The setting of light distribution diagram is the key file for the installation position of lamps and signal line direction in the project. For the setting of light distribution diagram, please refer to《Simple LED Software Specification V1.0》.

Note: MR-WT33 handheld addresser in the lighting diagram setting, controller type selection: 8-port 3072 channel.

III. Controller Parameter Setting

After completing the animation material and lighting diagram, select the model and click Generate offline file.

IV. SD Card Format and Corresponding File Copy

Offline Files are Classified as OSS001.arm-OSS00X.arm;

OSS001. arm-OSs00x. arm indicates sScene Segment 1- Scene Segment X;

Format The SD and Select The File System FAT32 (only FAT32 is supported);

Copy all The OSS001.arm-OSS00X.arm Files in The SD of The Corresponding Device.

Frequently Asked Questions

1、In MR-WT33 application, according to DMX512 standard protocol, the load channel and clock frequency should be set to what?

According to the standard protocol of DMX512, its standard value is as follows:

Number of loaded channels =512 channels;

Clock frequency (baud rate) =250K=0.25M

2、What is the type of USB power supply interface of MR-WT33? Is it feasible to use the high current output of mobile phone charging bank?

The power supply interface of the MR-WT33 handheld addresser is Type-C.

MR-WT33 can be charged by using mobile phone charging bank. Although the current output of mobile phone charging bank is generally up to 2.1A, the actual current output of mobile phone charging is non-constant current output, so the actual current will not exceed 0.5A when using MR-WT33.

3、Can the MR-WT33 handheld addresser be used as an offline master in engineering applications?

The MR-WT33 handheld addresser can read the offline effect file in the SD card and output the DMX512 signal to drive the LED lamp.

4、Why does MR-WT33 work abnormally after being used in the field for a period of time?

Under normal circumstances, for the convenience of use, the user uses rechargeable lithium battery power supply at the site, its storage power is limited, so there will be abnormal work after the use of one end of the time.

In case of such problems, USB power supply can be used to ensure the power of the handheld device.

Attentions

Warning Reminder

Please pay attention to dust and water

Avoid direct sunlight for a long time

Keep away from heat and fire sources

Do not place in an explosive gas environment

Keep the product in a secure position to prevent damage or personal injury

Please keep packing cases and packaging materials available when storing and transporting products.

Statement

The product specifications and information mentioned in this manual are for reference only and subject to change without prior notice.

Unless otherwise agreed, this manual is for use only as a guide, and the specifications, functions and information related to the product stated do not constitute any form of warranty.