

# LT-200 LED Digital Controller (2015 V2.2)



LT-200 controls LED with the following compatible ICs: LPD1101/6803/8803/8806, WS2801/2803/2811/2812, UCS1903/1909/1912/2903/6909/6912, TM1804/1809/1812, TLS3001/3002, P9813, D705.

Supporting international standard protocol DMX512/1990 interface, with DMX administration mode to invoke the built-in functions for choosing mode, speed, brightness, types and direction changing by DMX512 console. Furthermore, it has the DMX decoder mode, customers could use DMX512 console to program & control every channel of the LEDs with the compatible ICs listed above. (0-100% dimming range, program any lighting effect required).

Built-in LCD operator display, powerful but simple easy to use. Two ways to adjust modes, speed & brightness either by RF remote or controller itself.

## 1. Product Parameter:

### LT-200 LED Digital Controller (2013 V1.0)

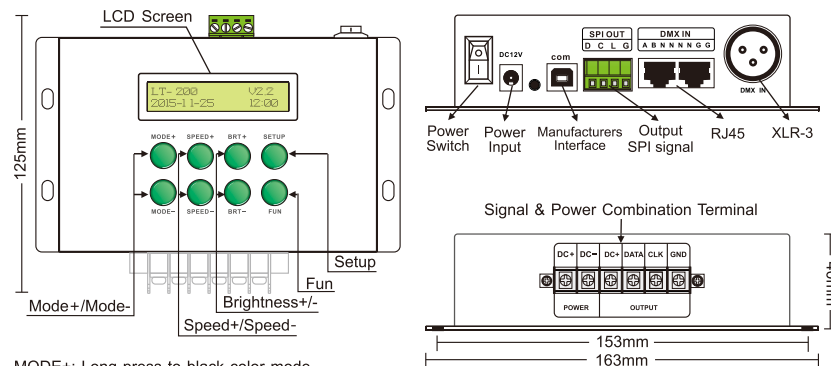
- Working Voltage: 12V DC (with an adapter to covert 100~240VAC to 12VDC)
- Power Consumption: <2W
- Output Signal: SPI(TTL)
- 3rd Part Port: DMX512
- Change Mode: 540 Modes
- Control Qty: 1024 Pixels
- Working Temperature.: -30°C~65°C
- Dimension: L163×W125×H40mm
- Package Size: L269×W129×H46mm
- Weight (G.W): 820g

## 2. Function Features:

- Built-in a LCD screen, simple to set up parameters.
- Built-in perpetual calendar, real-time display system clock, can be set up to play different programs in any time, Monday to Sunday or holiday.
- 540 lighting modes. Such as 7 static color, sync jumping and smooth, color flow, color chasing, smooth flow, meteor trailing, etc.
- Multi-level changing speed, brightness, RGB grey scales adjustment, effect of movement direction, etc.
- Feel free to define many changing modes into a step, 8 independent cycle steps maximum.

- Supporting 2 output ports: green terminals and signal & power combination terminal (load 20A current)
- Support third-party DMX512 interface, it can be realized DMX management mode, invoke controller's most function by DMX console
- Work as DMX-SPI decoder, using DMX512 console to control every channel and program new changing effect.

## 3. Configuration Diagram:



MODE+: Long press to black color mode.

MODE-: Long press to mode 31.

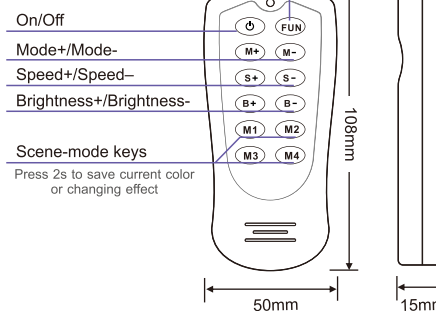
SETUP: Short press to adjust the mode direction. Long press to enter menu setting interface.

FUN: Short press to switch changing type. Long press to ID learning process.


### Controller

#### FUN

- Short press: Switch 8 kinds of mode types;
- Long press: Switch 4 kinds of mode directions.



#### ID Learning Method:

Long press  button on the controller for 2 seconds, there is a buzzer beep, keep pressing:

#### Learning ID:

Press any key on the remote in 3s.

#### Canceling ID:

Press any key on the remote over 3s.

Buzzer on/off: Long press "On/Off" button on the remote.

### RF Remote Control

## 4. Operating Instructions:

8 function keys on the controller : MODE+, MODE-, SPEED+, SPEED-, BRT+(brightness), BRT-, SETUP, FUN.

Table of Changing Modes.

No.	Color	Display	No.	Color	Display
1	Black	01 BLACK 2015-11-25 12:00	16	Red/Purple	16 R/P FLOAT SPEED:8 BRT:8
2	Red	02 RED FLOAT SPEED:8 BRT:8	17	Green/Yellow	17 G/Y FLOAT SPEED:8 BRT:8
3	Green	03 GRN FLOAT SPEED:8 BRT:8	18	Green/Cyan	18 G/C FLOAT SPEED:8 BRT:8
4	Blue	04 BLU FLOAT SPEED:8 BRT:8	19	Blue/Purple	19 B/P FLOAT SPEED:8 BRT:8
5	Yellow	05 Y/LW FLOAT SPEED:8 BRT:8	20	Blue/Cyan	20 B/C FLOAT SPEED:8 BRT:8
6	Purple	06 PUR FLOAT SPEED:8 BRT:8	21	Yellow/Purple	21 Y/P FLOAT SPEED:8 BRT:8
7	Cyan	07 CYN FLOAT SPEED:8 BRT:8	22	Yellow/Cyan	22 Y/C FLOAT SPEED:8 BRT:8
8	White	08 WHI FLOAT SPEED:8 BRT:8	23	Purple/Cyan	23 P/C FLOAT SPEED:8 BRT:8
9	Red & White	09 R/W FLOAT SPEED:8 BRT:8	24	Red/Green	24 R/G FLOAT SPEED:8 BRT:8
10	Green/White	10 G/W FLOAT SPEED:8 BRT:8	25	Red/Blue	25 R/B FLOAT SPEED:8 BRT:8
11	Blue/White	11 B/W FLOAT SPEED:8 BRT:8	26	Green/Blue	26 G/B FLOAT SPEED:8 BRT:8
12	Yellow/White	12 Y/W FLOAT SPEED:8 BRT:8	27	Red/Green/ Blue	27 RGB FLOAT SPEED:8 BRT:8
13	Purple/White	13 P/W FLOAT SPEED:8 BRT:8	28	All Color	28 ALL FLOAT SPEED:8 BRT:8
14	Cyan/White	14 C/W FLOAT SPEED:8 BRT:8			
15	Red/Yellow	15 R/Y FLOAT SPEED:8 BRT:8			

### 1-28 General Modes

#### [Attn]

How to select 7 static colors:

In the mode 2-8, select JUMP type and change the speed in Max. 8 or Min. 1.

#### For mode 1~28:

Press or to switch 8 mode types: JUMP, (on controller) (on remote)

FLASH, SMOOTH, FADE, FLOW, CHASE, METEOR, FLOAT.

Adjust speed by press or (on controller) (on remote)

For mode types FLOW/CHASE/METEOR/FLOAT, press or long press to switch 4 directions: (on controller) (on remote)  
(↑) forward, (↓) reverse, (↶) close, (↷) split.

29	DMX decode	29 DMX DECODE DMX ADDRESS:001	30	DMX mode	30 DMX MODE
31	Play1 off	31 PLAY1 OFF 2015-11-25 12:00	35	Play5 off	35 PLAY5 OFF 2015-11-25 12:00
32	Play2 off	32 PLAY2 OFF 2015-11-25 12:00	36	Play6 off	36 PLAY6 OFF 2015-11-25 12:00
33	Play3 off	33 PLAY3 OFF 2015-11-25 12:00	37	Play7 off	37 PLAY7 OFF 2015-11-25 12:00
34	Play4 off	34 PLAY4 OFF 2015-11-25 12:00	38	Play8 off	38 PLAY8 OFF 2015-11-25 12:00
39	Play1-Play8	39 PLAY1-PLAY8 2015-11-25 12:00			

### 29~30: DMX512 Control Modes

### 31~38: Automatic Change Modes

### 39: Automatic Time Running Mode

Press "MODE+" / "MODE-" button to switch modes.

## 5. "SETUP" Key Instruction:

5.1 In the **mode 1-28**, press button for 3 seconds to enter submenu, see the form below.

NO.	Submenu Function (press mode+/- to switch)	LCD Display	Setting Method
1	Pixel No. option (range: 0032-1024) Pixel width option (04, 08, 16, 32)	PIXEL NUMBER:0032 COLOR PIXEL: 08	Press   to switch items. Press   to adjust value.
2	Running times adjustment (range: 000-255) (Only work for the modes 31~38)	RUN TIMES:255 000-NOT RUNNING	Press   to adjust running times.
3	RGB grey scale adjustment (Mode 8 white color, range: 0-255. Rest modes, range: 127-255)	RGB BRIGHT ADJ R255 G255 B255	Press   to switch R/G/B. Press   to adjust RGB value. (Use cautiously, RGB default value 255)
4	Reset options to default	LOAD DEFAULT SET PRESS BRT+ - KEY	Press   to restore the default value of the current mode.

Press to save and exit submenu.

5.2 In the **mode 29**, press button for 3 seconds to enter submenu, see the form below.

NO.	Submenu Function (press mode+/- to switch)	LCD Display	Setting Methods
1	Set DMX address (range: 001-512) Multiple setting (range: 01-32)	DMX ADDRESS:512 DECODE MUL:01	Press   to switch items. Press   to adjust value.
2	Duplicate channel value (range 003-510) Repeat setting	DECODE NUM:003 REPEAT OUT:NO	Press   to switch items. Press   to adjust value.

Press to save and exit submenu.

5.3 In the **mode 30**, press button for 3 seconds to enter submenu, see the form below.

NO.	Submenu Function	LCD Display	Setting Methods
1	Set DMX address (Range: 0~512)	DMX ADDRESS:512	Press   to adjust value.


Press to save and exit submenu.





































Table of 29-30 Functional Modes.


Modes	Channel	Function
29 DMX Decoder Mode	1 <sup>st</sup> channel	0-255(R) : Red LED 0-100% dimming
	2 <sup>nd</sup> channel	0-255(G) : Green LED 0-100% dimming
	3 <sup>rd</sup> channel	0-255(B) : Blue LED 0-100% dimming
30 DMX Manage Mode	1 <sup>st</sup> channel	0-255: Select 1-29 modes, 256(0-255) values divided into 32 portion (8 value per portion). The 29 <sup>th</sup> mode occupy 4 portions (32 value).
	When 1 <sup>st</sup> channel select the 1-28 modes	
	2 <sup>nd</sup> channel	Speed (8 levels).
	3 <sup>rd</sup> channel	Brightness (8 levels).
	4 <sup>th</sup> channel	Mode type
	5 <sup>th</sup> channel	Direction changing
	When 1 <sup>st</sup> channel select 29 mode	
	2 <sup>nd</sup> channel	0-255(R) : Red LED 0-100% dimming
	3 <sup>rd</sup> channel	0-255 (G): Green LED 0-100% dimming.
	4 <sup>th</sup> channel	0-255 (B): Blue LED 0-100% dimming.
	5 <sup>th</sup> channel	Dynamic strobe
	6 <sup>th</sup> channel	Dynamic strobe

[Note] • The above changes by the DMX console are shown on the LCD screen accordingly.  
• (⏏) This sign on the screen indicates console signal.

30 DMX MODE	↓
P/W FADE	S3B3



5.4 In the **mode 31-38**, press  button for 3 seconds to enter submenu, see the form below.

NO.	Submenu Function (Press MODE+/- to switch)	LCD Display	Setting Methods
1	Setting switch state	31 PLAY1 OFF OPEN1 SAVE1	<p>Press   to switch items.  </p> <p>Press   to switch 2 options: ON/OFF Select "ON" to 39 automatic time running mode.</p> <p>Load 31~38 modes to 1~28 modes. press   to confirm.</p> <p>Save 1~28 modes to 31~38 modes. press   to confirm.</p>
2	Setting operation week	RUN WEEK: MTWTFSS TIME: 18:00-06:00	<p>Press   to switch items. M Monday T Tuesday W Wednesday T Thursday F Friday S Saturday S Sunday</p> <p>MTWTFSS (day of the week) 00:00-00:00 (time)</p> <p>Press   to adjust value. (if you do not choose the Monday to Sunday, the screen will appear " _ " the one mark)</p>
3	Operate time and date 1	DATE01: 0101-0103 TIME: 00:00-00:00	<p>Press   to switch items. 0101-0103 (date) 00:00-00:00 (time)</p> <p>Press   to adjust value.</p>
4	Operate time and date 2	DATE02: 0501-0503 TIME: 00:00-00:00	<p>Press   to switch items. 0501-0503 (date) 00:00-00:00 (time)</p> <p>Press   to adjust value.</p>
5	Operate time and date 3	DATE03: 1001-1007 TIME: 00:00-00:00	<p>Press   to switch items. 1001-1007 (date) 00:00-00:00 (time)</p> <p>Press   to adjust value.</p>
6	System clock setting	DATE/TIME SETUP 2012-01-01 12:00	<p>Press   to switch items. 2012-01-01 12:00</p> <p>Press   to adjust value.</p>
7	IC types and RGB sequence setting	CHIP: TM1809 ORDER: RGB	<p>Press   to switch CHIP and ORDER.</p> <p>Press   to adjust value.</p> <p>Chip option: TM1809, LPD6803, LPD8806, WS2801, P9813, TLS3001. Order option: RGB, RBG, GRB, GBR, BRG, BGR</p>
8	Modes restore default value	LOAD DEFAULT SET PRESS BRT+ - KEY	<p>Press   to restore default value of the current setting automatic mode.</p>

Press  to save and exit submenu.

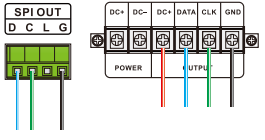
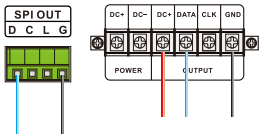
5.5 In the **mode 39**, press  button for 3 seconds to enter submenu.

LOAD DEFAULT SET  
PRESS BRT+ - KEY

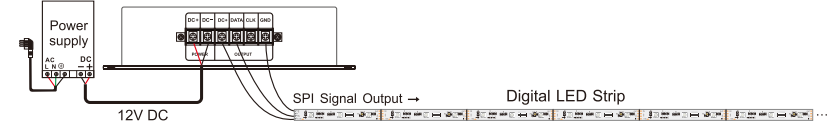
Press   to restore default value of mode 39.

In mode 39, will play the corresponding mode at some fixed time as pre-saved in mode 31-38, only factory reset is available of this submenu, please use cautiously.

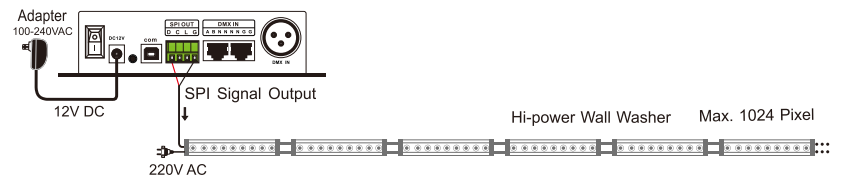
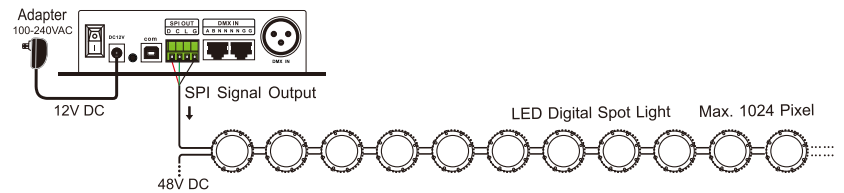
## 6. Wiring Diagram:

Wiring Method	Signal cable	Choosing IC	Compatible ICs
	Two cables DATA CLK	CHIP: LPD6803 ORDER: RGB	LPD6803, LPD1101, D705 UCS6909, UCS6912
		CHIP: LPD8806 ORDER: RGB	LPD8803, LPD8806
		CHIP: WS2801 ORDER: RGB	WS2801, WS2803
		CHIP: P9813 ORDER: RGB	P9813
	Single cable DATA	CHIP: TM1809 ORDER: RGB	TM1804, TM1809, TM1812 UCS1903, UCS1909, UCS1912, UCS2903, UCS2909, UCS2912, WS2811
		CHIP: TLS3001 ORDER: RGB	TLS3001, TLS3002

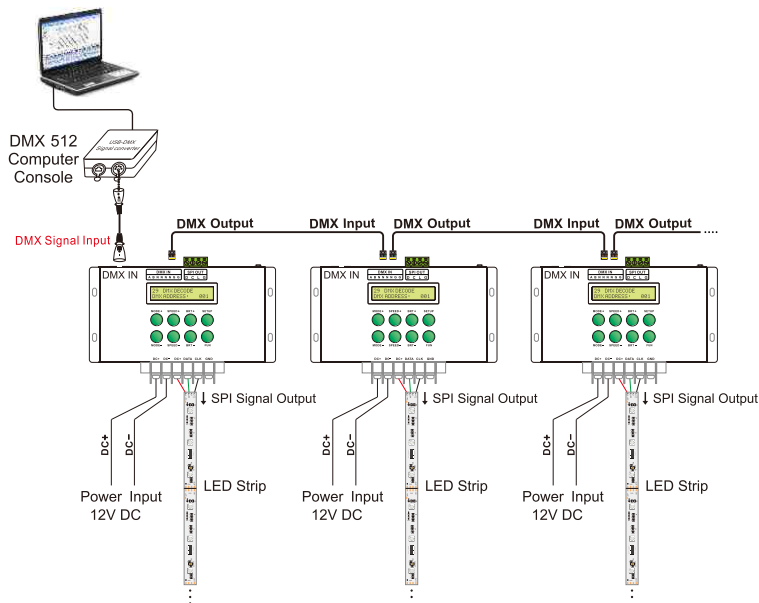
### 6.1 Sharing power supply



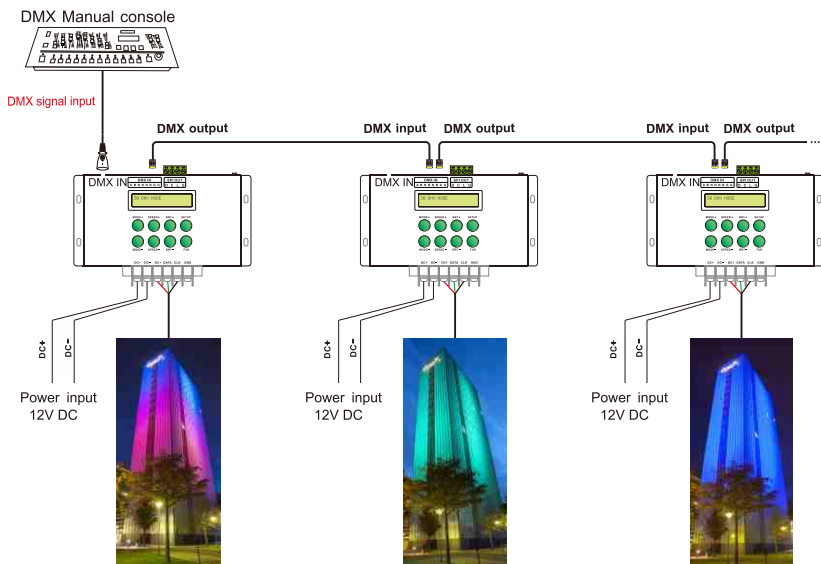
### 6.2 Power-up separately



6.3 Connected with DMX 512 computer console to realize DMX decoding function.



6.4 Connected with DMX 512 manual console, realizing DMX administrative function.



## 7. Attention:

- 7.1 The product shall be installed and serviced by the qualified person.
- 7.2 This product is non-waterproof. Please avoid the sun and rain. When installed outdoors please ensure it is mounted in a water proof enclosure.
- 7.3 Good heat dissipation will prolong the working life of the controller. Please ensure good ventilation.
- 7.4 Please check if the output voltage of the LED power supply used comply with the working voltage of the product.
- 7.5 Please ensure that adequate sized cable is used from the controller to the LED lights to carry the current. Please also ensure that the cable is secured tightly in the connector.
- 7.6 Ensure all wire connections and polarities are correct before applying power to avoid any damages to the LED lights.
- 7.7 If a fault occurs, please return the product to your supplier. Do not attempt to fix this product by yourself.

## 8. Warranty Agreement:

- 8.1 We provide lifelong technical assistance with this product:
    - A 5-year warranty is given from the date of purchase. The warranty is for free repair or replacement if cover manufacturing faults only.
    - For faults beyond the 5-year warranty, we reserve the right to charge for time and parts.
  - 8.2 Warranty exclusions below:
    - Any man-made damages caused from improper operation, or connecting to excess voltage and overloading.
    - The product appears to have excessive physical damage.
    - Damage due to natural disasters and force majeure.
    - Warranty label, fragile label and unique barcode label have been damaged.
    - The product has been replaced by a brand new product.
  - 8.3 Repair or replacement as provided under this warranty is the exclusive remedy to the customer. We shall not be liable for any incidental or consequential damages for breach of any stipulation in this warranty.
  - 8.4 Any amendment or adjustment to this warranty must be approved in writing by our company only.
- ★This manual only applies to this model. We reserve the right to make changes without prior notice.