

# LT-209 LED Digital pixel Music Controller



LT-209 music controller support matrix model and linear model. Matrix model based on the input or the rhythm of the field receiving audio/music to come into being the corresponding geometric high LED color and achieve the effect of rolling jump, make a music LED screen. Linear model use a single audio data to control brightness of LED lamps and lanterns all pixels.

LT-209 music controller support control TM1809 series of tubes(can also be based on LPD6803 control, LPD1101 D705, UCS6909, UCS6912 LPD8803, LPD8806 , TM1804, TM1809, TM1812, UCS1903, UCS1909, UCS1912 UCS2903, TLS3001 TLS3002, WS2801, WS2803, WS2811, WS2812, P9813 and compatible LED driving IC lightings), max. 1024 pixels.

Supports audio line input and built-in microphone audio live music receiving, adjustable audio receiver sensitivity.

Built-in 16 changing modes, including a black effect, 13 static color and 2 DMX change pattern. DMX change model can also be sound Control.

## 1. Technical Specs:

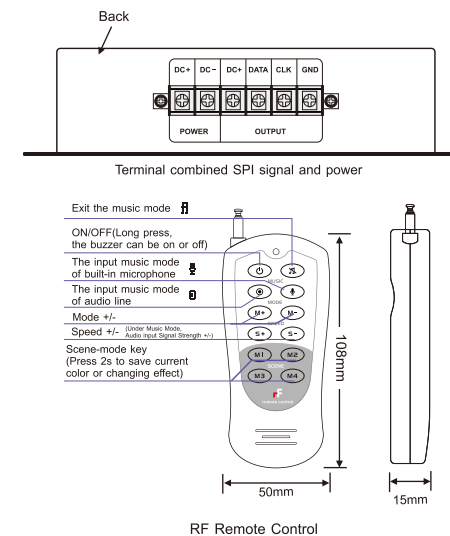
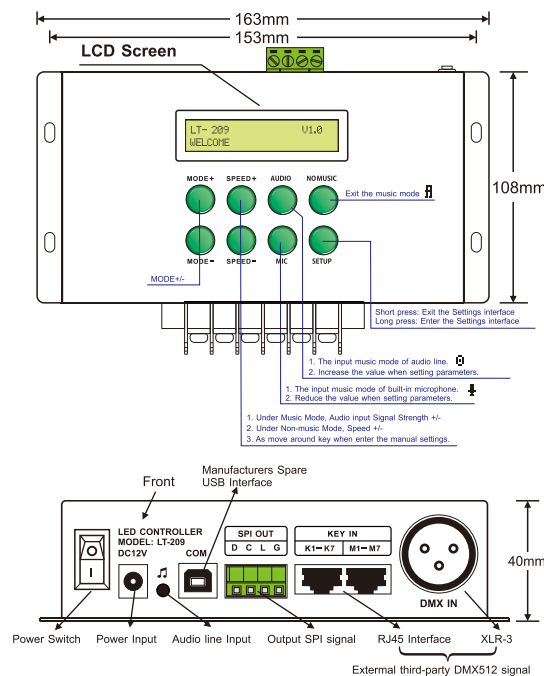
### LT-209 LED Digital pixel Music Controller

- Working Voltage: DC12V (with an adapter to covert AC100~240V to DC12V)
- Power consumption: <2W
- Output signal: SPI(TTL)
- 3rd part port: DMX512
- Function Mode: 16 modes
- Control Qty.: 1024 pixels
- Working temperature: -30°C~65°C
- Dimension: L163×W125×H40mm
- Package Size: L269×W129×H46mm
- Weight (G.W) : 760g

## 2. Performance Features:

- With LCD screen, easy to operate in showing all functions.
- Supports Matrix and linear model lighting control.
- Supports audio line input and built-in microphone for live music.
- Audio receiving sensitivity is adjustable.
- Built-in 16 changing modes, such as 7 colors brightness, 7 colors skipping, 7 colors smooth, etc.
- Support the third party DMX512 interface, realize DMX management mode, and recall the most functions of controller via DMX Console.

## 3. Construction Drawing:



**RF Remote Control**

**The learning method for RF Remote control**  
 Long Press the "NO MUSIC" key on the receiver, buzzer long sound, keep pressing the key.Press any key on the remote control in 3 seconds, activated successful between the remote control and the receiver.  
 Press any key on the remote control in 3 seconds, cancelled successful between the remote control and the receiver.

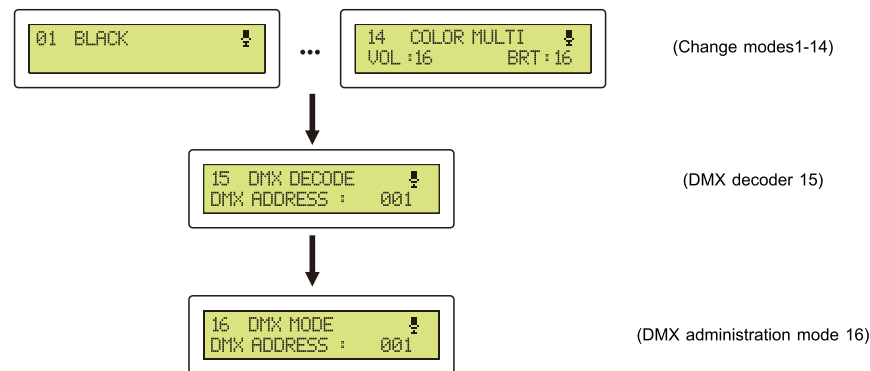
## 4. Operating Instructions:

The controller has 8 function keys:

MODE+/MODE-, SPEED+/SPEED-, AUDIO/MIC(Music mode), NO MUSIC(Exit the music mode), SETUP

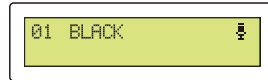
### 1. Basic operation

Press MODE+/- to switch general change modes 1-14, DMX decoder 15, DMX administration mode 16.



**2. Options of Matrix Mode and Straight line Mode**

In the mode of 01, long press SETUP key in 3 seconds to enter submenu, as follows:



No.	Submenu Function (Press MODE+/- to Change Menu Below)	LCD Display Status	Setting Methods
1	Choose Connection Mode: (Matrix Mode and Linear Mode)	LINK MODE: SCREEN	Press AUDIO/MIC to choose SCREEN (Matrix Mode) or LINE(Linear Mode)
2	Choose the type of Chip Choose RGB Sequence	CHIP : T11809HS ORDER : RGB	Press SPEED+/- to switch Chip type or RGB Sequence menu item. Press AUDIO/MIC to choose Chip type or RGB Sequence
3	Mode recover default	LOAD DEFAULT SET PRESS AM/MM KEY	Press AUDIO/MIC to restore the default value of the current mode

Press "SETUP" to exit after parameter setting.

**3. Operation of Matrix Mode**

(1) Matrix Mode Submenu Operation: In the mode of 02-14, long press SETUP key in 3 seconds to enter submenu, as follows:

No.	Submenu Function (Press MODE+/- to Change Menu Below)	LCD Display Status	Setting Methods
1	Light pillar(frequency range) number choice(1/4/8/16) Pixel number choice (8/16/32/64/128/256)	FREQ BAND NUM : 16 EACH DOT NUM : 008	Press AUDIO/MIC to choose Light Pillar/ Pixel Number; Press SPEED+/- to switch Light Pillar/ Pixel Number Menu item.
2	Brightness Choice (Range:01-16) Color Edit (Range: RGB each 0-255)	BRT : 16 NO : 01 R255 G000 B000	Press SPEED+/- to switch Brightness/ RGB/Color number(The modes only more than 2 colors) Menu item; Press AUDIO/MIC to adjust numerical value
3	Background Color Edit (Range: RGB each 0-255)	BACKGROUND COLOR R000 G000 B000	Press SPEED+/- to switch each RGB, Press AUDIO/MIC to adjust each RGB value.
4	Mode recover default	LOAD DEFAULT SET PRESS AM/MM KEY KEY	Press BRT+/- to restore the default value of the current mode

Press "SETUP" to exit after parameter setting.

(2)Following is the Changing Function Mode1-14 in the Matrix Mode(all the colors are editable)

No.	Display Content	Instruction	No.	Instruction	Instruction
1	BLACK	OFF Effect	8	WHITE	Same Color for the Full-band
2	RED	Same Color for the Full-band	9	COLOR	One Color for Each Frequency Range
3	GREEN	Same Color for the Full-band	10	RB MULTI	Two Colors for Each Frequency Range
4	BLUE	Same Color for the Full-band	11	GC MULTI	Two Colors for Each Frequency Range
5	YELLOW	Same Color for the Full-band	12	BW MULTI	Two Colors for Each Frequency Range
6	PURPLE	Same Color for the Full-band	13	RGBW MULTI	Four Colors for Each Frequency Range
7	CYAN	Same Color for the Full-band	14	COLOR MULTI	Eight Colors for Each Frequency Range

(3)Mode 15

Short press the MODE+/- switch to 15 DMX Decode(DMX decoder), the entire screen for 1 color under connecting to DMX console satus, controlled by consecutive three channels data of DMX console.

DMX Channel	Function
CH1: 0-255	Red LED from dark to bright
CH2: 0-255	Green LED from dark to bright
CH3: 0-255	Blue LED from dark to bright

[Attn]: The penultimate character of 1st row on LCD display with or without console signals.



The setting method of submenu:

Under the DMX DECODE(Mode 15 DMX decoder) status, long press the SETUP button(setting button) for 3 seconds to enter submenu as follows:

Submenu function	LCD display status	Setting method
DMX address setting (Range from 001~512)	DMX ADDRESS : 001	Press SPEED +/- to increase or decrease of tens digit; Press AUDIO/MIC to increase or decrease of unit digits

(4)DMX management mode under matrix mode

Short press MODE+/- switch to 16 DMX MODE(DMX management mode), using 4 DMX channels manage color and brightness of entire modes under connecting DMX console.

DMX channel	Function
CH1: 0-255	Select 1-15 mode
CH2: 0-255	1-14 mode brightness adjustment(16 level brightness), brightness adjustment of 15 mode R.
CH3: 0-255	Brightness adjustment of 15 mode G.
CH4: 0-255	Brightness adjustment of 15 mode B.

[Attn]: The penultimate character of 1st row on LCD display with or without console signals.



The setting method of submenu:

Under the DMX 16 mode status, long press the SETUP button(setting button) for 3 seconds to enter DMX address to setting submenu, find the follow table:

Submenu function	LCD display status	Setting Methods
DMX address setting (range from 001~512)	DMX ADDRESS : 001	Press SPEED +/- to increase or decrease of tens digit; Press AUDIO/MIC to increase or decrease of unit digits.

4. Linear mode operation method

(1)Linear mode submenu setting: in general changing modes 02-14, long press SETUP (setting key)in 3 seconds to enter submenu, as following:

No.	Submenu Function (Press MODE+/- to Change Menu Below)	LCD Display Status	Setting Methods
1	PIXEL Total Amount (range 32-1024)		Press AUDIO/MIC to choose the pixel number
2	Brightness choice (01-16) Color Edit (range each RGB 0-255)		Press SPEED+/- to switch between the brightness and RGB color menu item, press AUDIO/MIC to adjust the value.
4	Mode recover default		Press AUDIO/MIC to restore the default value of the current mode

Press "SETUP" to exit after parameter setting.

(2)Rectilinear mode changing functional mode:1-14:

No.	Display Content	Instruction	No.	Instruction	Instruction
1	BLACK	Closed effect	8	WHITE	RGB value adjusted
2	RED	RGB value adjusted	9	RGB JUMP	
3	GREEN	RGB value adjusted	10	COLOR JUMP	
4	BLUE	RGB value adjusted	11	RGB STROBE	
5	YELLOW	RGB value adjusted	12	COLOR STROBE	
6	PURPLE	RGB value adjusted	13	RGB SMOOTH	
7	CYAN	RGB value adjusted	14	COLOR SMOOTH	

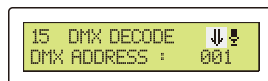
(3)Mode 15

Submenu setting method:

In Mode 15 (DMX decoder), long press SETUP key in 3 seconds to enter DMX address setting submenu, as follows:

No.	Submenu Function (Press MODE+/- to Change Menu Below)	LCD Display Status	Setting Methods
1	DMX address setting (range001~512),		Press SPEED+/- to increase or decrease the ten digit, press AUDIO/MICto increase or FUN decrease the units digit.
2	decoder channels, pixels multiple, the rest of pixels if output again.		Press SPEED+/- to switch each numbers, press AUDIO/MIC to increase or decrease each parameter.

Notice: The reciprocal character of LCD line 1 showed with console signal or not.

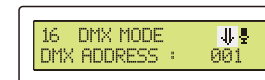


(4)the DMX management mode under the linear mode

Short press MODE+/- switch to DMX MODE 16 (the DMX management mode),in the condition of connection DMX, use three DMX channel to manage all mode of color, brightness, and speed.

DMX Channel	Function
CH1: 0-255	1-15 mode selection
CH2: 0-255	1-15 model for brightness adjusting (16 levels)
CH3: 0-255	Speed regulation (16 speeds), under music mode speed is invalid

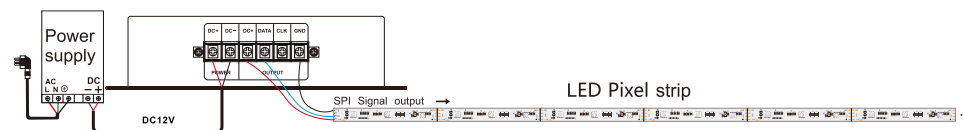
Notice : LCD line 1 penultimate characters display whether there is DMX signals.



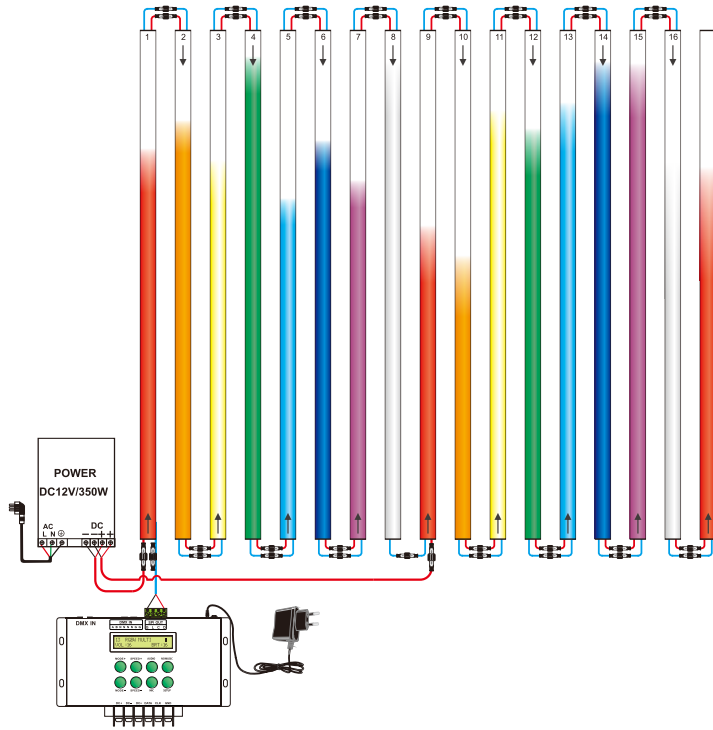
5. Connection diagram :

Mode of connection	Signal cable	Choose Controller IC	Support IC models
<p>Two cables DATA CLK</p>			LPD6803, LPD1101, D705, UCS6909, UCS6912
			LPD8803, LPD8806
			WS2801, WS2803
			P9813
<p>One cable DATA</p>			TM1804, TM1809, TM1812, UCS1903, UCS1909, UCS1912, UCS2903, UCS2909, UCS2912, WS2811
			TLS3001, TLS3002

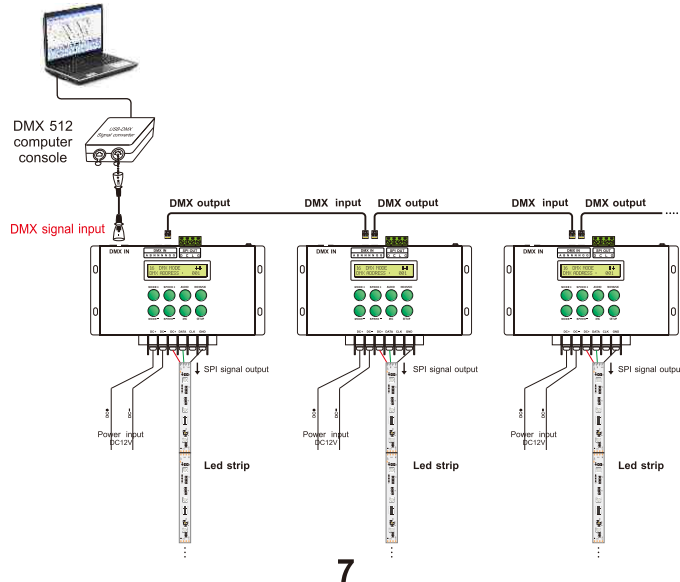
1. Linear connection mode effect



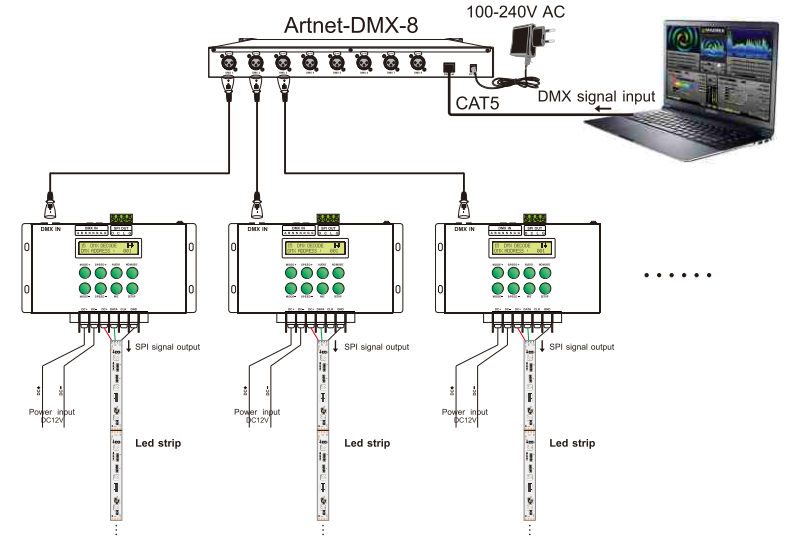
2. Tube connection matrix model effect



3. DMX management mode



4. DMX Decoder mode



6. Attention:

1. The product shall be installed and serviced by a qualified person.
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.
3. Good heat dissipation will prolong the working life of the controller. Please ensure good ventilation.
4. Please check if the output voltage of any LED power supplies used comply with the working voltage of the product.
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 to avoid the accidents due to overheat and poor contact on the wire.
6. Ensure all wire connections and polarities are correct before applying power to avoid any damages to the LED lights.
7. If a fault occurs please return the product to your supplier. Do not attempt to fix this product by yourself.

7. Warranty Agreement:

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 and covers manufacturing faults only.
  - For faults beyond the 5-year warranty we reserve the right to charge for time and parts.
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.
3. Repair or replacement as provided under this warranty is the exclusive remedy to the customer. Ltech shall not be liable for any incidental or consequential damages for breach of any stipulation in this warranty.
4. Any amendment or adjustment to this warranty must be approved in writing by Ltech only.

★ This manual only applies to this model. Ltech reserves the right to make changes without prior notice.