

LIGHTTEK

24CH DMX CONTROLLER

HD-104

USER MANUAL

Introduction

It is a microprocessor controlled system that is fully DMX-512 and MIDI compatible. The scene setter is a 24 channel DMX-512 and standard MIDI controller. 48 sets of program can be programmed in 4 pages and the total steps can not be more than 4500. We strongly recommend that you take time to read this manual fully before you attempt to use the controller.

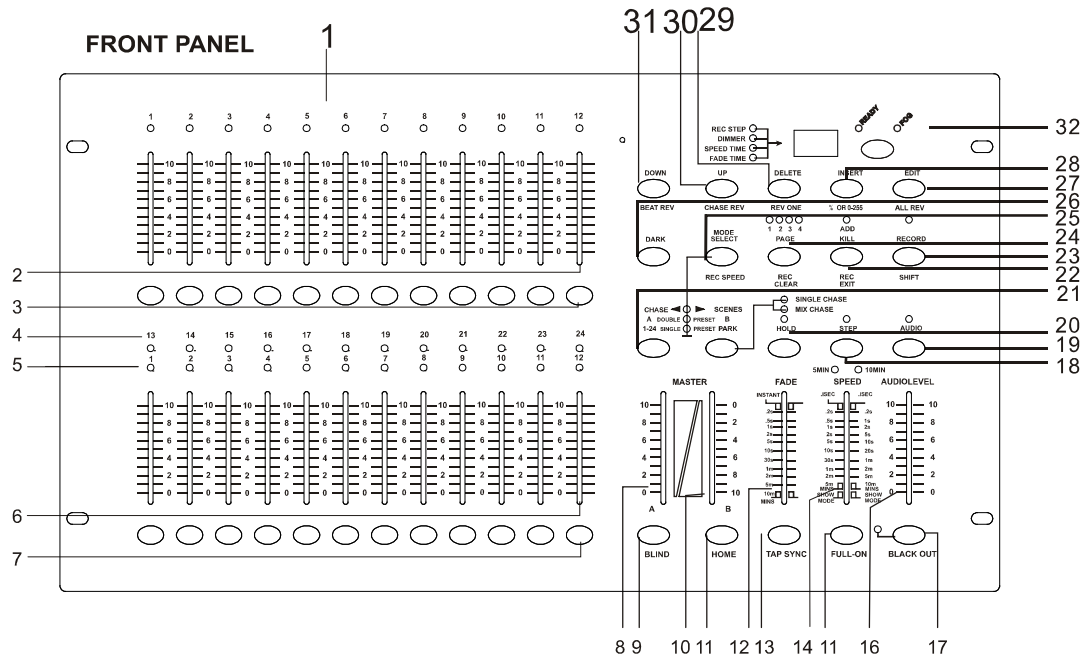
Warning

1. To prevent or reduce the risk of electrical shock or fire, do not expose this unit to rain or moisture.
2. Often memory clearing may cause damage to the memory chip, be careful not to initialize your unit frequently to avoid this risk.
3. Only use the recommended AC/DC power adaptor.
4. Be sure to save the packing carton in case you may ever have to return the unit for service.
5. Do not spill other liquids or water in to or on to your amplifier.
6. Be sure that the local power outlet matches the required voltage for your fixture.
7. Do not attempt to operate this unit if the power cord has been frayed or broken. Please route your power cord out of the way of foot traffic.
8. Do not attempt to remove or break off the ground prong from the electrical cord. This prong is used to reduce the risk of electrical shock and fire in case of an internal short.
9. Disconnect from main power before making any type of connection.
10. Do not remove the top cover under any conditions. There are no user serviceable parts inside.
11. Disconnect the unit's main power when left unused for long periods of time.
12. This unit is not intended for home use.
13. Carefully inspect this unit for damage that may have incurred during shipping. If the unit appears to be damaged, do not attempt any operation, please contact your dealer.
14. This unit should be operated by adults only, never allow small children tamper or play with this unit.
15. Never operate this unit under the following conditions:
 1. In places subject to excessive humidity
 2. In places subject to excessive vibration or bumps
 3. In area with a temperature over 45°C/113°F or less than 2°C/35.6°F

Cautions

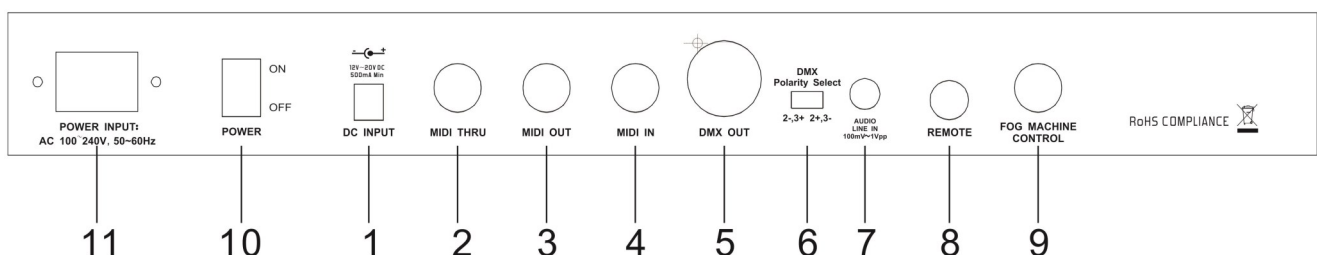
1. There are no user serviceable parts inside this unit.
2. Do not attempt any repairs by yourself; doing so will void your manufacture's warranty.
3. In the unlikely event your unit may require service please contact your nearest dealer.
4. This unit is intended for indoor use only.
5. After having removed the packaging check that the unit is NOT damaged in any way. If in doubt, DON'T use it and contact an authorized dealer.
6. Packaging material (plastic bags, polystyrene foam, nails, ect.) MUST NOT be left within children's reach, as it can be dangerous.
7. STOP using the unit immediately in the event of serious operation problems and either contact your local dealer for a check or contact us directly.
8. DO NOT dismantle or modify the unit.

2 - Controls and functions



1. **PRESET A LEDS.**
2. **CHANNEL SLIDERS 1-12:**
These sliders will adjust the output of 1 to 12 channels from 0 to 100 % or 0 to 255.
3. **Flash key 1-12:**
Press to activate maximum channel output.
4. **PRESET BLEDS.**
5. **SCENES LEDS.**
6. **CHANNEL SLIDERS 13-14:**
These sliders will adjust the output of 13 to 24 channels from 0 to 100% or 0 to 255.
7. **Flash key 13-24:**
Press to activate maximum channel output.
8. **MASTER A SLIDER:**
The slider will adjust the output of preset A.
9. **BLIND KEY:**
In CHASE ◀▶ SCENES, this key, when activated, the output of each channel will be controlled only by slider or flash key.
10. **MASTER B SLIDER:**
The slider will adjust the output of preset B.
11. **HOME KEY:**
In CHASE ◀▶ SCENES, this key, when activated, the output of each channel will be come back from control by slider or flash key to control by program.
12. **FADE TIME SLIDER:**
Move to adjust fade time.
13. **TAP SYNC:**
In AUTO CHASE, press it twice to define chasing speed.
14. **SPEED SLIDER:**
Move to adjust chasing speed.
15. **FULL ON KEY:**
When activated, whole channel output will be maximum and disable BLACK OUT.

16. **AUDIO LEVEL SLIDER:**
Move to adjust the sensitivity of audio.
17. **BLACK OUT KEY:**
The key will force all DMX to “0” .
18. **STEP KEY:**
Press it once and the program go one step.
19. **AUDIO KEY:**
Press it to get into audio control.
20. **HOLD KEY:**
Press and hold it, whole output will be hold.
21. **PARK:**
IN CHASE $\triangleleft \triangleright$ SCENES mode, press it to select SINGLE CHASE OR MIX CHASE. In DOUBLE PRESET, pressing PARK B is same as MASTER B at the maximum. In SINGLE PRESET, pressing PACK A is same as MASTER A at the maximum.
22. **REC EXIT:**
Exit record. When the LED is lighting, it is in KILL, press any one of all channel FLASH and all output is zero except the one channel.
23. **RECORD KEY:**
Press it to record the step of program.
24. **PAGE KEY:**
Press it to select desired SCENE program in appropriate page.
25. **MODE SELECT:**
By pressing the key you can select CHASE $\triangleleft \triangleright$ SCENES DOUBLE RESET or SINGLE PRESET.
26. **DARK KEY:**
Press it to pause whole output, including FULL ON and FLASH.
27. **ALL REV:**
The key, when activated will reverse chasing direction of all program.
28. **0 % OR 0-255 KEY:**
Press it to select 0% or 0-255 on DISPLAY.
29. **REV ONE:**
Press and hold the key, then press any one of PRESET B .the SCENE program will chase in reversed direction.
30. **CHASE REV:**
The key will reversed the SCENE program chase direction controlled by slider of speed.
31. **BEAT REV:**
The key will reversed the SCENE program chase direction controlled by regular beat.
32. **FOG MACHINE:**
The key will control fog machine.



1. **POWER INPUT:**
DC 12V-18V, 500mA MIN.
2. **MIDI THRU:**
Use to transmit MIDI data received on the MIDI IN connector.
3. **MIDI OUT:**
Transmit MIDI data originated by itself.
4. **MIDI IN:**
Received MIDI data.
5. **DMX OUT:**
DMX output.
6. **DMX POLARITY SELECT:**
Select the polarity of DMX output.
7. **AUDIO INPUT:**
Line in music single.100mV-1Vpp.
8. **REMOTE CONTROL:**
FULL ON and BLACK OUT are remote controlled using 1/4` stereo jack.
9. **FOG MACHINE:**
Connect fog machine.
10. **POWER SWITCH.**
11. **POWER INPUT:**
AC 100-240V 50-60Hz

3 – Operating instructions

1. RECORD ENABLE

1. Press and hold RECORD KEY.
2. Press FLASH 1 FLASH 6 FLASH 6 FLASH 8 keys in sequence.
3. Release RECORD, the led is lighting, recording is ready.

2. ERASE ALL PROGRAMS

1. Press and hold RECORD KEY.
2. Press FLASH 1 FLASH 4 FLASH 2 FLASH 3 IN SEQUENCE.
3. Release RECORD.

3. CLEAR MEMORY

1. Press RECORD key, and then press REC CLEAR KEY.
2. Release RECORK and REC CLEAR at a time.

4. RECORD PROGRAM

1. Set desired channel and record it.
2. Light the relevant page led.
3. Press, RECORD then press appropriate FLASH.
4. Release RECORD.

For example:

create a program, record it in the 28th SCENE.

1. Clear memory.
2. Light 1-24 SINGLE LED.
3. Set channel slider 1-24 to min. position and MASTER A to max. position.
4. Move slider 1 to max. position, press RECORD then move it to min. Position. Continue moving other sliders until all sliders are set.
5. Press PAGE key to light page 3 led.
6. Press RECORD, then press FLASH 16.
7. Release RECORD and FLASH 16, the program of 1-24 full on in sequence is recorded in the 28th SCENE.

5. DELETE A PROGRAM

1. Press PAGE to light the desired PAGE LED.
2. Press RECORD, then press appropriate FLASH twice.

For example:

To delete the 40th SCENE PROGRAM.

1. Press PAGE to light page 4 led.
2. Press RECORD, then press FLASH 16 twice.
3. Release RECORD.

6. SCENE EDIT ENABLE

1. Press PAGE light desired PAGE led.
2. Press MODE SELECT to light CHASE $\triangleleft \triangleright$ SCENES led.
3. Press EDIT and desired scene FLASH.
4. Release EDIT and the FLASH, the relevant SCENE LED is lit and others go out, now editing is enable.

For example:

To make the 11th SCENE program enter EDIT mode.

1. Press PAGE to light PAGE 1 led.
2. Press MODE SELECT to light CHASE $\triangleleft \triangleright$ SCENES LED.
3. Press EDIT and FLASH23.
4. Release EDIT and FLASH 23.

7. EXIT EDIT MODE

1. Press RECORD, then press EXIT.
2. Release RECORD and EXIT.

8. DELETE STEP

1. In EDIT mode, press STEP to execute the program till the step to be deleted.
2. Press DELETE. The step is deleted and the next step is executed.

9. ADD STEP

1. IN EDIT mode. Record the step to be inserted.
2. Press STEP to execute the program till the step you want to insert before.

10. MODIFY STEP

1. In EDIT mode. Press STEP to execute the program till the step to be modified.
2. Press UP or DOWN and desired FLASH, the output will show on display, you feel it is ok release FLASH

11. Change showing mode of dimmer PRESS and hold RECORD, then press 0% or 0-255 KEY.

12. SELECT AND RUN PROGRAM

1. Press MODE SELECT TO light CHASESCENES led.
2. Press PAGE to light the desired page led.
3. Mode MASTER B slider to max. position.
4. Move desired scene channel slider to min; then move it up, the program is selected and executed.

13. RUN A PROGRAM WITH REGULAR BEAT

1. Press AUDIO to extinguish AUDIO LED.
2. Press PARK to light MIX MODE LED.
3. Select to run the scene program.
4. Move the SPEED slider or press TAP SYNC twice to define beat time.
5. Press REC SPEED and the desired FLASH KEY. then the program will be executed with the beat time.

14. RUN A PROGRAM WITH SPEED SLIDER.

1. Press AUDIO to extinguish AUDIO led.
2. Press PARK to light MIX MODE led.
3. Select to run the scene program.
4. Move SPEED slider to SHOW MODE position.
5. Press REC SPEED, then press the appropriate FLASH.

For example:

run the 14th SCENE program with the speed of 1 step per second, then set it to be controlled by speed slider.

1. Press MODE SELECT to light CHASESCENES LED.
2. Press AUDIO to extinguish its led.
3. Press PARK to light MIX MODE LED.
4. Move all channel sliders to min. Position.
5. Move MASTER B slider to max. position.
6. Press PAGE to light PAGE 2 LED.
7. Move the 14th channel slider to max. Position.,
8. Move SPEED slider until 1.00 appear in display and SPEED LED is lit.
9. Press REC SPEED and FLASH 14, then release both keys; the 14th SCENE program is set to run 1 step per second.
10. Move SPEED slider to SHOW MODE position. Press REC SPEED and the 14th FLASH, then the 14thSCENE program is set to be controlled by SPEED slider, move SPEED slider until 0.10appears on display, the 14th program will run with 10 steps per second.

15. SPEED SETTING

A: SLOWEST SPEED SLIDER SETTING (5 MIN)

1. Press and hold RECORD.
2. Press the 5th FLASH KEY 3 times, then release RECORD.
3. THE 5MIN LED is lit, which means that 5MIN SPEED slider is done.

B: SLOWEST SPEED SLIDER SETTING (10MIN)

1. Press and hold RECORD.
2. Press the 10th FLASH KEY 3times, then release RECORD.
3. The 10 MIN LED is lit, which means that 10MIN SPEED slider is done.

16. MIDI IN SETTING

1. Press and hold RECORD
2. Press 1st FLASH KEY 3times, then release RECORD, when CHI appears on display, you can select MIDI IN channel from 1st FLASH to 16th FLASH.
3. After you press desired FLASH, the appropriate channel led is lit.
4. Press RECORD and EXIT to withdraw MIDI IN setting.

17. MIDI OUT SETTING

1. Press and hold RECORD
2. Press 2nd FLASH KEY 3 times, then release RECORD, when CHO appears on display, you can select MIDI IN A channel from 1st FLASH TO 16th FLASH.
3. After you press desired FLASH, the appropriate channel led is lit.
4. Press RECORD and EXIT to withdraw MIDI OUT setting.

18. RECEIVE FILE DUMP

1. Press and hold RECORD.
2. Press 3rd FLASH KEY 3times, then release RECORD, when IN appears on display, it is ready to receive file dump.
3. All other operations are void when receiving file dump. It will withdraw receiving file dump automatically when receiving is over or mistakes is occurred. Power on after power off also pause receiving file dump.

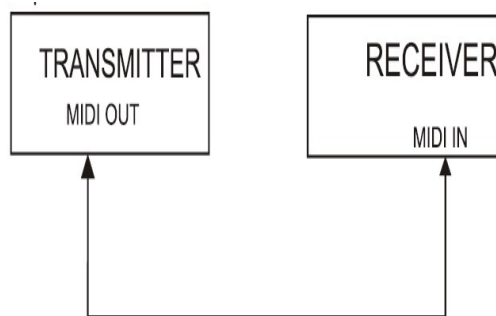
19. SEND FILE DUMP

1. Press and hold RECORD.
2. Press 4th FLASH KEY 3times, then release RECORD, when OUT appears on display, it is ready to receive file dump.
3. All other operations are void when receiving file dump. It will withdraw sending file dump automatically when sending is over or mistakes is occurred. Power on after power off also pause receiving file dump.

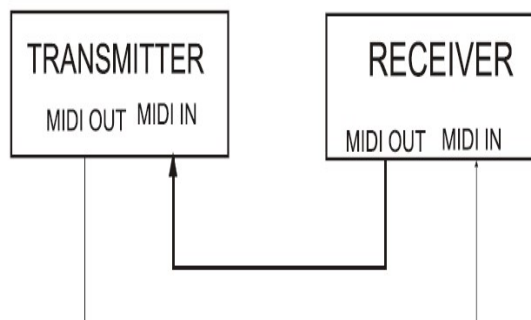
20. DETAILED DESCRIPTION

1. **FADE TIME:**
The period that output varies from full dimmer to zero or from zero dimmer to full dimmer.
2. **SINGLE MODE:**
SCENE program is executed one by one and the No. is showing on display. Its speed is controlled by SPEED slider.
3. **MIX MODE:**
ALL selected program are executed synchronously, each is allowed to have respective chasing speed.
4. When CHASE $\triangleleft \triangleright$ SCENES LED is lit, you can select scene program using PRESET B channel sliders. BLIND one of PRESET B channels, the appropriate channel slider together with MASTER A slider control its output, and the maximum dimmer of the program is maintained until you HOME the channel.
5. **FADE TIME & SPEED TIME INDICATIONS:**
 - A: when time is more than 1minute, the indication includes two dots.
For example:
1minute past 15 second, indicate 1.15.
Half past 4minute, indicate 4.30
10 minute, indicate 10.0
 - B: when time is less than 1 minute, the indication has one dot only.
For example:
11.5 second, indicate 11.5
1.2second, indicate 1.2
0.55second, indicate 0.55
6. **Transmit and receive file**

A: open loop mode:



B: closed loop mode:



NOTE:

when sending file dump in open loop mode, you should set up receiving mode for the receiver, otherwise receiving is disable.

7. When the power voltage is too low, the display shows LOP, now you should check whether the power is OK. It is normal that LOP is appeared for a short while just after power is turned on.

21. MIDI RUN

1. If MIDI data is not received within 10minutes, the channel and program turned on by MIDI will be cleared.
2. When sending or receiving file dump, the device ID is 55H .All
3. Information (include system exclusive) is sent or received in file dump. You can send SCENE program to storage or another unit, you can also receive SCENE program from storage or another unit.
4. This unit sends or receives NOTE information. Relevant functions are as follows:

NOTE NUMBER	VELOCITY	FUNCTION
22-69	PROGRAM MASTER	TURN ON/OFF PROGRAM 1-48
70-93	CHANNEL DIMMER	TURN ON/OFF CHANNEL 1-24
94		FULL ON
95		DARK
96		HOLD
97		TURN ON/OFF AUDIO CHASE
98		CHASE ◁▷ SCENES
99		DOUBLE PRESET MODE
100		SINGLE PRESET MODE
101		STEP CHANGE
102		BLACK OUT

NOTES

TECHNICAL SPECIFICATIONS

Power input: DC 12V, 500mA.

DMX output: 3Pin FEMALE XLR.

Midi single: 5Pin DIN.

Fuse (internal): F-0.5A 250V 5x20MM.

Dimensions: 482X264X85MM.

Weight: 4.3 kg.