CONTROL2448 Instruction Manual

PERFORM FX

Dimmer Master DMX Controller

CAUTION - ATTENTION - VORSICHT

RISK OF ELECTRIC SHOCK- DO NOT OPEN
RISQUE D'ELECTROCUTION- NE PAS OUVRIR
STROMSCHLAGGEFAHR- NICHT OFFNEN

Version 1.0   www.terralec.co.uk

User Manual
Dimmer Master

Dear Customer,

Thank you for purchasing the Dimmer Master DMX controller. With decades of experience in design and production, we are one of the leading manufacturers of professional sound and lighting equipment.

This unit has been designed and manufactured to the highest of standards so you can be assured you have made a good investment.

For optimum safety and to take full advantage of all the Dimmer Master features, please ensure you read this manual in full.

Product Description:
The Dimmer Master is a 48 channel DMX controller, suitable for use with dimmer packs, LED lighting and effects lights. The controller can store up to 36 scenes and 48 chases with a total of 200 steps. This desk has 2 pages of 24 channel sliders and 12 playback sliders.

Safety Advice:
- Read this manual in full before operating this product.
- Keep this manual in a safe place for future reference.
- Carry and transport this product with care. Dropping this product may result in serious mechanical failure.
- The manufacturer accepts no responsibility for injury or damage caused by not following the manual provided.

Protection from Electric Shock:
- Do not connect the AC power plug to the unit before connecting your lights.
- Only connect this unit to a mains socket with suitable trip and RCD protection.
- To disconnect from the mains socket always remove by the mains plug. Do not attempt to remove by pulling the mains cable.
- Disconnect the unit from the mains supply before cleaning. Cleaning should be carried out with a soft, dry cloth.
- Do not expose this unit to any liquids.
- Do not operate near exposed water or in high humidity.
- Choose a suitable route for mains cables, ensuring trip hazards are avoided and the mains cable is not at risk of being crushed.
- Do not open this unit to service. There are no user serviceable parts inside. Any servicing or repairs should be carried out by a qualified engineer only. Any user attempt to service or adapt this unit will void your warranty and could result in serious malfunction or injury.

Protection from Fire:
- Do not place near sources of heat or ignition.
- Do not block any ventilation holes.
- Check your AC wall socket will take the power you are applying to avoid overloading the mains supply.
- Ensure you are using the correct voltage DC power supply, set to the correct polarity.

Protection from Injury and Damage:
- Do not attempt to modify this unit.
- Always install the unit in a suitable location where vibrations to the unit are avoided.
- Check this unit matches the mains voltage and frequency before plugging it in to your mains socket.
- If any liquids or objects have entered the unit, switch it off immediately and consult a qualified engineer.
- In the event of malfunction or damage to the mains cable, disconnect from the mains supply immediately and consult a qualified engineer.
- All parts should be replaced with genuine spare parts and carried out by a qualified engineer.

Contents & Unpacking:
The box should contain Master Dimmer, power supply and user manual.
If you suspect any damage or missing parts, please contact your dealer immediately.

Specifications:
Name: Dimmer Master
Code: CONTROL2448
Power supply: DC 12v 500mA min.
Power consumption: 20 watts
Output: DMX 512 (3-pin)
Audio Input: 100mV ~ 1Vpp
Weight: 4.6kg

The Dimmer Master is a DMX 48-channel controller, suitable for dimmer packs, LED lights and effect lights.

Features Include:
- Controls up to 48 channels.
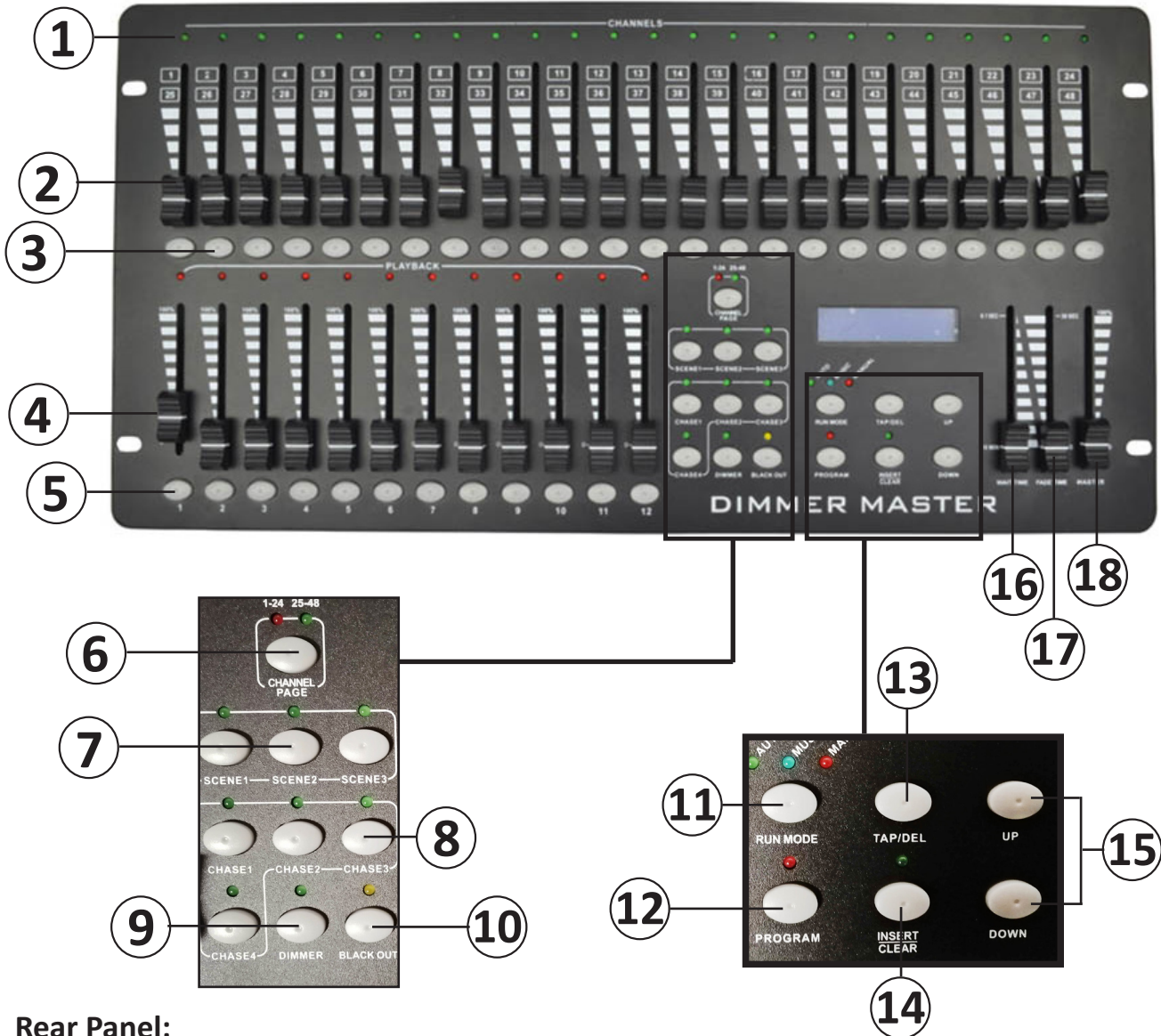- Scenes/chases can be stored.
- Speed and fade can be used after programming.
- Chases and scenes can be mixed in playback.
- A chase can have up to 200 steps.
- 3-pin DMX output socket.
- Audio input or built in microphone, for playback of chases to the bass beat.
- 12 Playback sliders.
- USB Connection for back up.

Product Information:

Controller Front:

Rear Panel:

Product Information:

Controller Front:

	Name	Use
1	Channel LEDs	Will light when channel slider 1-24/ 25-48 is being used.
2	Channel Sliders	Used to dim the corresponding channel up or down.
3	Channel Flash Buttons	When pressed, this activates the corresponding channel to full brightness.
4	Playback Sliders	Used to activate user built in scenes and chases.
5	Playback Flash Buttons	Used to activate saved scenes and chases whilst button is held down.
6	Channel Page Button	Used to switch between channel slider 1-24 and 25-48.
7	Scene Buttons 1-3	Used to select scene 1-12, 13-24 and 25-36; when used in conjunction with playback sliders.
8	Chase Buttons 1-4	Used to select chase 1-12, 13-24, 25-36 and 37-48; when used in conjunction with playback sliders.
9	Dimmer Switch	Used to select dimmer scene (1-12). When used in conjunction with the playback sliders, these take priority over the programmed scenes and chase during playback. Scenes need to be stored at 100%.
10	Blackout Button	When pressed and the LED is lit, all channel DMX values will be set to zero.
11	Run Mode Button	Used to select Auto, Music and Manual mode.
12	Programme Button	Hold for 3 seconds to enter programme mode, the LED will light up. This can also be used for programming scenes and steps in chases.
13	Tap/ Del Button	In auto mode, tapping this button will set the time between steps in a chase. In programme mode, it is used to delete scenes or chases.
14	Insert/ Clear Button	When programming a chase, this button inserts a step in between two already programmed steps. In manual mode, this button clears any channel values.
15	Up/ Down Buttons	When in programming mode, use the up and down buttons to go through the steps in a chase. In Music Mode, these buttons adjust sound sensitivity.
16	Wait Time Slider	Used to set the speed between the steps in a chase.
17	Fade Time Slider	Used to set the time a programmed step takes to get to its programmed maximum in a chase.
18	Master Slider	Controls the DMX values on all channel sliders and programmes.

Rear Panel:

	Name	Use
19	USB Socket	Save scenes and chases to a USB stick.
20	Audio Input	Input sound to run chases- sound to light.
21	3-pin XLR DMX Output	Communicate with DMX equipment.
22	DC Input	Power supply input.
23	On/ Off Switch	Switches controller on and off.

Common Terms:

The following are common terms used in intelligent light programming:

Blackout- is a state whereby all lighting fixtures output is set to '0' or 'Off', usually on a temporary basis.

DMX-512- is an industry standard digital communication protocol, frequently used in entertainment lighting equipment.

Fixture- refers to your lighting effect or other device, such as a dimmer, which you can control.

Sliders- are also known as faders.

Scanner- refers to a lighting effect which has a pan and tilt mirror. However, DMX controllers may refer to this term when describing the control of a DMX-512 compatible device.

MIDI- **M**usical **I**nstrument **D**igital **I**nterface- is a standard term for representing musical information in a digital format. A MIDI input provides external triggering of scenes using MIDI devices, such as a MIDI keyboard.

Stand Alone- refers to a fixtures ability to function independently of an external controller. This is usually in sync to music, due to a built-in microphone.

Fade Slider- is used to adjust the fade time between scenes within a chase.

Speed Slider- affects the amount of time a scene will hold its state. It is also considered a wait time.

Shutter- is a mechanical device in the lighting fixture that allows you to block the lights path. It is often used to lessen the intensity of the light output or strobe.

Playbacks- can either be scenes or chases that are directly recalled by the user. A playback may also be considered a program memory, which can be used during a show.

Chase- is a program built up using steps/ scenes.

Pack- normally refers to a dimmer pack which can come with different channel options. For example, 4 or 12 outputs.

RGBAW- **R**ed, **G**reen, **B**lue, **A**mber, **W**hite- Normally referring to the LED types in the fixture.

First Time Operation:

1. Remove all packaging materials.
2. Connect a DMX cable from controller to your first light (or pack). Connect a DMX cable from the first light (or pack) to the second. Do this until all lights (or packs) are connected.
3. If you are using dimmer packs, plug the Par Cans/ Theatre Spots into the dimmer packs.
4. Plug your controller into the mains with the supplied AC/DC power supply.
5. Plug your dimmer packs or lights into the mains.
6. If you are using 4-channel packs or 4-channel LED Par Cans, set the first unit to DMX address 1; the second to DMX address 5; third to DMX address 9 and the fourth to DMX address 13.
Note: Some lights will have digital display, some will have small dip switches.
7. Once you have turned on your controller, check if the blackout light is illuminated. If it is, press the black button.
8. Move the Master slider to 100%.
9. Make sure the controller is in manual mode.
10. Use the channel page button to put the controller into 1-24 mode.
11. Move all the channel sliders up and your lights should have output.
12. Follow the rest of the manual to make full use of all the programming options.

Entering Programme Mode:
Hold the programme button down for 3 seconds, the corresponding LED will light up.

Exiting Programme Mode:
Hold the programme button down for 3 seconds, the corresponding LED will go out.

Working with Scenes:

Create a Scene:
1. Enter programme mode.
2. Choose channel page 1-24 or 25-24 this will depend on how many lights you have and how many channels they take up, you may need to switch between both pages during programming.
3. Create desired output by adjusting the channel sliders (changes in fixture attributes such as colours & gobos, or simply dimmer values).
4. Choose a scene button to save your scene, there are 3 scene buttons each can store 12 scenes playbacks.
5. Once the desired scene is created press the programme button once. If you have any scenes already saved, the playback LEDs corresponding to these will be lit. Choose a playback position which is not lit to save your scene.
6. Save the scene by pressing the corresponding playback flash button, all the LEDs will briefly flash telling you the scene has been saved successfully.
7. If you wish to save more scenes repeat steps 2-6.
8. Exit Programme mode.

Playback a Scene:

1. Choose the correct scene button
2. Make sure the master dimmer is set to 100%.
3. Make sure the black LED is not lit.
4. Move up the slider of the desired playback where the scene you want is stored. You can also press the corresponding flash button to flash the scene at maximum.

> ### Note:
> You can playback 2 or more scenes at once.
> Fade and wait time have no response in this mode.

Delete a Scene:

1. Enter programme mode.
2. Press and hold the Tap/Delete button.
3. Whilst holding down the Tap/Delete button, press the flash button of the desired scene you wish to delete.
4. The LED will go out indicating the scene is deleted.
5. Exit programme mode.

Working with Chases:

Create a Chase:

1. Enter Programme mode.
2. Choose Channel Page 1-24 or 25-24 this will depend on how many lights you have and how many channels they take up, you may need to switch between both pages during programming
3. Select and press a chase button. There are 4 chase buttons, each can store 12 chase playbacks.
4. Select a playback where the chase will be saved by pressing the corresponding flash button, the LED will light up.
5. Create the first step of your chase by moving the channel sliders.(changes in fixture attributes such as colours & gobos, or simply dimmer values). Make sure the master dimmer is at 100%.
6. Press the Programme button once, all the LEDs will flash indicating the scene has been saved.
7. Repeat steps 5-6 until all the desired steps are created.
8. Exit Programme mode.

Playback a Chase:

1. Select and press the chase button where the chase is stored.
2. Move the relevant playback slider to 100%.
3. Make sure the master slider is at 100% and the blackout light is not lit.
4. Choose a Run Mode, either Manual, Music or Auto
5. Manual: Use the Up and Down button to go through each step. The fade and wait time faders do have an effect in this mode.
6. Music: The steps will run to the beat of the music. The music is picked up via the built-in microphone or via the RCA line level socket on the back. The sensitivity can be adjusted by the up and down buttons. The fade and wait time sliders have no effect in this mode.
7. Auto: The chase steps change via the wait and fade time sliders or by taping the Tap/Del button to set the speed.

Inserting a Step into a Chase:

1. Enter Programme mode.
2. Select the desired chase
3. Select the desired playback by pressing the corresponding flash button, the LED will light up.
4. Press the Insert/Clear button.
5. Use the Up and Down buttons to find the point where the step needs to be added.
6. Create the step using the channel sliders.
7. Press the Programme button. All the LEDs will flash briefly to tell you the step has been saved.
8. Press the Insert/Clear button.
9. Exit Programme mode.

Deleting a Step from a Chase:

1. Enter Programme mode.
2. Select the desired chase.
3. Select the desired playback by pressing the corresponding flash button, the LED will light up.
4. Use the Up and Down buttons to find the scene that needs to be deleted.
5. Press the Tap/Del button to delete the step.
6. Exit Programme mode.

Deleting a Chase:

1. Enter Programme mode.
2. Select the relevant chase button.
3. Hold the Tap/Del button down, the Playback LEDs that have chases saved in them will light up.
4. Whilst holding down the Tap/Del button, press the flash button corresponding to the chase that needs to be deleted.
5. All the LEDs will flash briefly indicating the chase has been deleted.
6. Exit Programme mode.

Working with Dimmer Scenes:

Create a Dimmer Scene:
1. Enter Programme mode.
2. Choose channel page 1-24 or 25-24 this will depend on how many lights you have and how many channels they take up, you may need to switch between both pages during programming.
3. Press the dimmer button. 12 playback scenes can be saved.
4. Create desired output by adjusting the channel faders (changes in fixture attributes such as colours & gobos, or simply dimmer values).
5. In this mode faders have to be set to 100% for the scene to be saved.
6. Once the desired scene is created press the programme button once. If you have any scenes already saved the playback LEDs corresponding to these will be lit. Choose a playback which is not lit to save your scene.
7. Save the scene by pressing the corresponding playback flash button, all the LEDs will briefly flash telling you the scene has been saved successfully.
8. If you wish to save more scenes repeat steps 2-7
9. Exit programme mode.

Playback a Dimmer Scene:
1. Press the dimmer button.
2. Make sure the master dimmer is set to 100%.
3. Make sure the black LED is not lit.
4. Move up the slider of the desired playback where the scene you want is saved. You can also press the corresponding flash button to turn the scene on. Use the Insert/Clear button to clear.

> ### Note:
> You can playback 2 or more scenes at once. Fade and wait time have no response in this mode. Dimmer scenes over-ride chase and normal scenes that are saved.

Delete a Dimmer Scene:
1. Enter programme mode.
2. Press and hold the Tap/Delete button.
3. Press the flash button of the desired dimmer scene you wish to delete.
4. The LED will go out indicating the scene is deleted.
5. Exit programme mode.

Delete all Saved Data:
1. Turn off the console.
2. Hold down run Mode, Program and Tap/Del buttons
3. Turn the controller on whilst holding the above buttons down.
4. Hold the 3 buttons down until the display says RESET OK.
5. All the saved data is now deleted.

Save a Show (Scenes and Chases) to a USB Stick:

1. Insert a USB stick into the socket on the back panel.
2. Make sure you are not in program mode.
3. Press and hold the Run Mode button and the Up button for 2 seconds
4. The display will say Press **CH1-24 Key save to USB.**
5. Press one of the Channel Flash Buttons.
6. The display will show the progress, once completed it will show **File saved OK.**

> **Note:**
> You can save up to 24 different shows, which can be called back when needed via an external USB stick.

Loading a Show (Scenes and Chases) from a USB Stick:

1. Insert a USB stick into the socket on the back panel.
2. Make sure you are not in programme mode.
3. Press and hold the Run Mode button and Down button for 2 seconds.
4. The display will display Press **CH1-24 Key Loader File.**
5. Press the relevant Channel Flash button that corresponds to the show you wish to load.
6. The Display will show the progress, once completed it will Show **Loader File OK**

Maintenance:

The PERFORM FX Master Dimmer requires almost no maintenance. However, you should keep the unit clean. Disconnect the main power supply and then wipe the cover with a dry cloth. Do not immerse in liquid. Do not use alcohol or solvents.
Keep connections clean. Disconnect electric power and then wipe the DMX and audio connections with a dry cloth.

Troubleshooting:

If fixture is not responding to DMX
1. Check all connections are correct.
2. Check DMX addressing is correct.
3. Check blackout is turned off.
4. Check the master slider is at 100%.
5. If all the above fails to work, unplug from the mains, wait 30 seconds then reconnect to the power supply.
6. If it is still not working, contact your dealer.

DMX Basics:

DMX is short for "digital multiplexer", which is a universal protocol designed for the entertainment industry. It allows control of intelligent fixtures like scanners, moving heads, LED par cans, dimmer packs and effects machines etc. DMX allows you to control many fixture channels, normally up to 512, with varying channels from 0-255 (0-100%). This will give control of channels such as gobo selection, movement, colours, dimming and timing to name just a few.

DMX is a very good system, as all this information can be sent down one cable. Used in conjunction with a DMX controller with memory, all your channel settings can be saved and recalled easily.

DMX was designed so that all manufacturers can use the same protocol/ language to control their fixtures, allowing the end user to use any make fixture from their DMX controller, as long as both are DMX compatible, and the controller has enough channels to control the fixture that is attached. Fixtures have an input and output DMX socket, allowing you to connect from the controller to the first fixture then from that fixture to the next (this is often referred to as 'daisy chaining').
Sockets are normally 3 pin XLR but can be 5 pin XLR.

DMX fixtures need to have a DMX address set, this is so they can then decode the correct information from the controller. This is normally done by a digital display panel, where the address can be changed by simple up and down buttons; the system address ranges from 1-512. Alternatively, it may be controlled by a row of small switches, called dip switches; on this type of system, the required address is then converted to a binary number.

ON

OFF

DMX512 Start Channel (Binary)   Action if No DMX
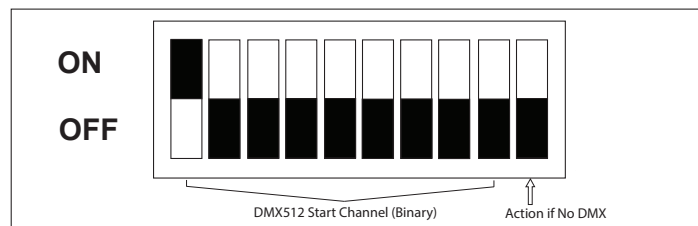
To work out your dip switch settings you can simply download a DMX calculator from the internet.
The order in which fixtures are connected in a DMX line does not influence the DMX address, a fixture set to DMX address 1 can be put in a DMX line anywhere from beginning, middle to end. As long as it has its address set to 1, it knows to take information from that point onward.

DMX Wiring and Connections:

3 pin DMX wiring is more common, although using a 5 pin connector is better to stop confusion with audio leads. With 5 pin connections, not all pins are used, though it is worth checking your manual for your fixture, as some lights use the unused pins for low voltage control.
To avoid erratic behaviour from your fixture, ensure when making cables, you always use suitable DMX cables and do not connect pin 1 GND to the outer casing of the connector (as you may do with your audio cables). Do not make "Y" leads to split cable fixtures; always use the in and out sockets or a DMX splitter.

We also recommend you put a DMX terminator in any fixture which does not have a DMX lead connected from the output socket to another fixture; to reduce unexpected behaviour. A DMX terminator is simply a male XLR plug with 120 Ohms, ¼ watt resistor, soldered across pins 2 and 3.
You can also buy these pre-made.

3 Pin	5 Pin
Pin 1 GND	Pin 1 GND
Pin 2 -	Pin 2 -
Pin 3 +	Pin 3 +
	Not Used
	Not Used

Example of a DMX Fixture with 5 Channels:

Ch1	Ch2	Ch3	Ch4	Colour	
Pan	Tilt	Shutter/Shaking	Gobo	Normal	Split

Ch1 – Pan: 540° (0°)

Ch2 – Tilt: 270° (0°)

Ch3 – Shutter/Shaking:
- 246-255 Open
- 247 Fastest speed shaking
- 132 Slowest speed shaking
- 131 Fastest speed shutter
- 16 Slowest speed shutter
- 008-015 Open
- 000-007 Blackout

Ch4 – Gobo:
- 255 Fastest speed Gobo change
- 128 Slowest speed Gobo change
- 120-127
- 111-119
- 103-110
- 094-102
- 086-083
- 077-085
- 069-076
- 060-068
- 052-059
- 044-051
- 035-043
- 0-26-034
- 018-025
- 009-017
- 000-008

Colour – Normal:
- 255 Fastest speed Rainbow Effect
- 128 Slowest speed Rainbow effect
- 118-127 Pink
- 107-117 Yellow
- 096-106 Orange
- 086-095 Light Green
- 075-085 UV Purple
- 064-074 Blue
- 054-063 Red
- 043-053 Amber
- 032-042 Light Blue
- 022-031 Magenta
- 011-021 Green
- 000-010 White

Colour – Split:
- 255 Fastest speed Rainbow Effect
- 128 Slowest speed Rainbow effect
- 121-127 Pink
- 113-120 Yellow+Pink
- 106-112 Yellow
- 098-105 Orange+Yellow
- 091-097 Orange
- 083-090 Light Green+Orange
- 076-082 Light Green
- 068-075 UV Purple
- 061-067 Blue
- 053-060 Red+Blue
- 046-052 Red
- 038-045 Amber
- 031-037 Light Blue
- 023-030 Magenta
- 016-022 Green+Magenta
- 008-016 Green
- 000-007 White

Each fixture takes up to 5 DMX Channels (see above):

You have a cable from the controller to the first fixture cable, then from first to second and so on. The last light then has a DMX terminator plugged in.

Example of a DMX Line

DMX 512 (Controller)

120ohm 1/4W (Terminator)
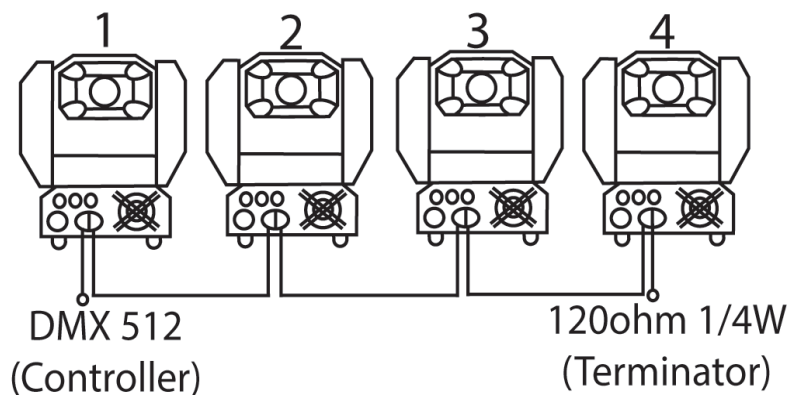
Fixture 1 would be set to DMX address: **DMX Address 1**
Fixture 2 would be set to DMX address: **DMX Address 6**
Fixture 3 would be set to DMX address: **DMX Address 11**
Fixture 4 would be set to DMX address: **DMX Address 16**

We recommend you to read manuals for your DMX fixture and controller in full. Some controllers tell you what each fixture address needs to be, and some lights need other settings changed before they will work.

When setting your DMX address, you must ensure fixtures don't overlap from one to the next. You can set two fixtures to the same address, and as long as they are the same fixture (i.e. same channel layout) then they will do the same as each other.

Thank you for taking the time to read this information.
For further information, please contact sales@terralec.com or visit
www.terralec.co.uk