

 **LED STRIP STUDIO**

LADY DIMMER

User Manual

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TABLE OF CONTENTS

SAFETY INSTRUCTIONS	3
DEVICE INTRODUCTION	4
DEVICE SPECIFICATION	5
DEVICE VARIANTS	7
DEVICE OVERVIEW	7
DEVICE BLOCK DIAGRAM	8
DEVICE CONNECTION	8
DEVICE SETTINGS	10
FAQ	11
WARRANTY	12
DISPOSAL OF YOUR OLD DEVICE	13
CONTACTS	13

SAFETY INSTRUCTIONS

Installation should be performed only by a competent person or professional electrician. Make sure that the installation complies with the standards and rules that apply in your country.

- **Do not use the device if it seems to be damaged.**
- **Use the device only as described in this user manual.**
Any other use or use under other operating conditions is improper and may result in personal injury or property damage.
- **No liability will be assumed for damages resulting from improper use.**
Never open the controller and do not attempt repairs yourself.
- **Do not place the device close to heat sources and always ensure enough ventilation.**
- **Do not place the unit on surfaces that are heat sensitive.**

This device has been designed for indoor use only. Do not expose the unit to direct sunlight. Do not allow this device to meet liquids. Electrical shock could result. Also, damage to the device, smoke, and overheating could result from contact with liquids. Clean the device components that are accessible from the outside regularly. The cleaning frequency depends on the operating environment: damp, smoky or particularly dirty environments can cause greater accumulation of dirt on the device components. Clean with a dry soft cloth. Stubborn dirt can be removed with a slightly dampened cloth.

- **Never use solvents or alcohol for cleaning.**
- **Establish all connections when the unit is switched off.**
Use the shortest possible high-quality cables for all connections.
Make sure that cables cannot cause a trip hazard.
- **Never touch the plug contacts with sharp or metal objects.**
- **Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!**
- **Ensure that children do not detach any small parts (e.g. screws, connectors or the like) from the unit. They could swallow the pieces and choke!**
- **Never let children unattended use electrical devices.**

DEVICE INTRODUCTION

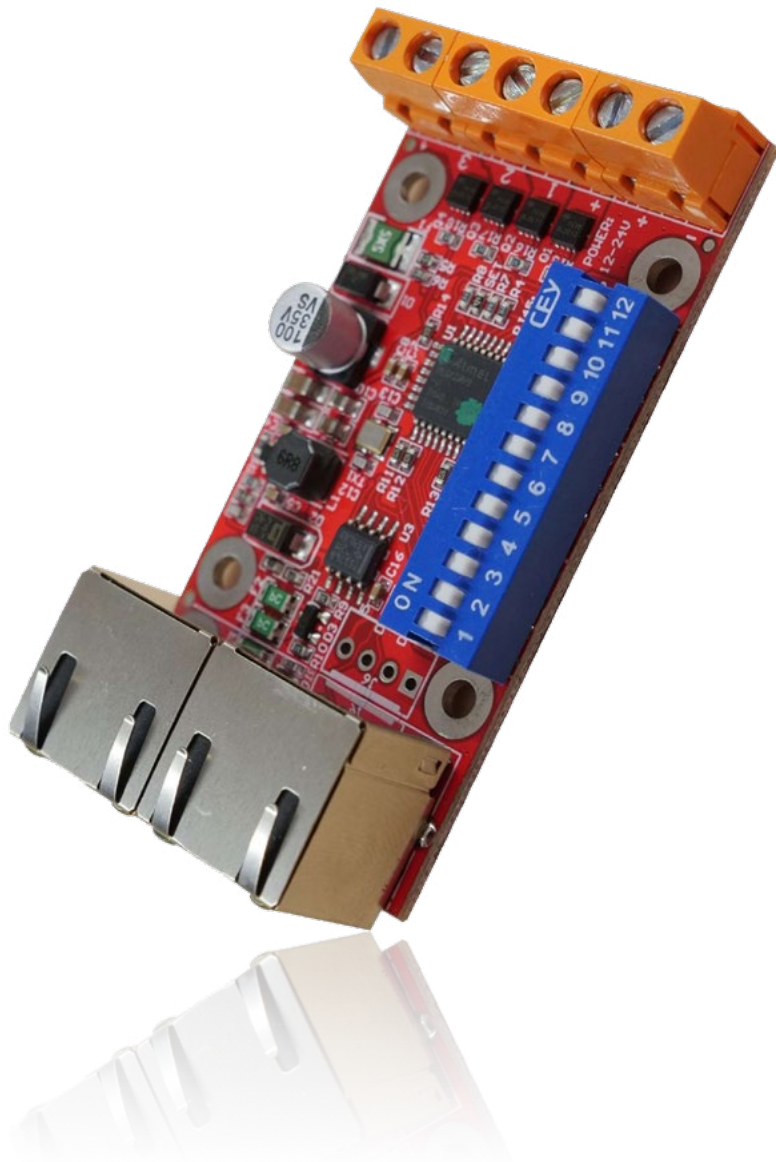
Lady dimmer is a simple and small 4 channel DMX dimmer designed for dimming 12-24V constant voltage (CV) fixtures such as LED strips.

It has four independent open-drain outputs thus is ideal for LED strips:

- **WHITE LED STRIPS (4 INDEPENDENT SECTIONS)**
- **SINGLE COLOR LED STRIPS (4 INDEPENDENT SECTIONS)**
- **RGB LED STRIPS**
- **RGBW LED STRIPS**

With its high PWM frequency it is flicker-free on most video cameras.

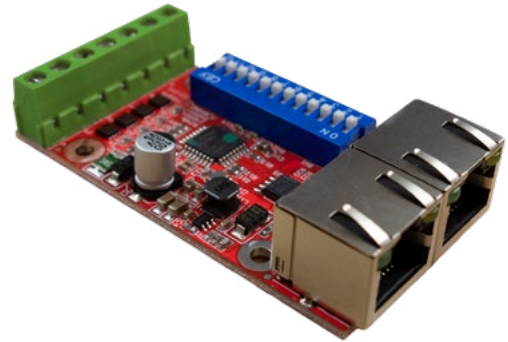
Thanks for ready pads with 5V power for wireless DMX module can be used on battery powered wireless controlled mobile objects.



DEVICE SPECIFICATION

LADY DIMMER

DMX dimmer for Analog (CV) LED Strips



Applications

- General illumination
- Theatre
- Decoration illumination
- Light show
- Events, lounges, clubs
- Special effects
- Scenography
- Showcase

Technical specification

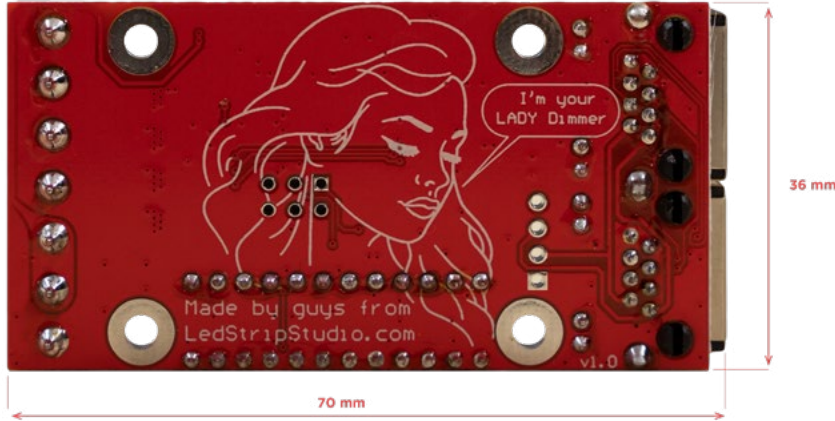
Controls over	DMX512
Operating voltage	12-24V DC
Self power consumption	1W
Power input connector	2 pole screw terminal block pitch 5mm for wires <1.5mm²
Max. total pass thru current	8A
DMXin Channels total	4
DMXin port connector type	RJ-45
DMXin port type	DMX512
DMXin port protection	Yes, ESD
DMXin isolated	No
DMXout port connector type	RJ-45
DMXout port type	DMX512 (pass thru)
Output Channels total	4
OUTPUT port connector type	5 pole screw terminal block pitch 5mm for wires <1.5mm²
OUTPUT port electrical type	Open Drain, Max 3A/Channel, Max 8A Total
OUTPUT port protection	No
Output connector pins	+,1,2,3,4
Address/parameter selector	12bit DIP switch
Status LEDs on RJ45 connectors	Green: Power, Yellow: DMX status
LED output dimming type	PWM
Grayscale	8bit (256 levels)
PWM Frequency	3900Hz or 490Hz

Special features/options:	User selectable H or L PWM frequency, Static/Test mode, Dmx hold or blackout on DMX lost selectable, 5V power output for wireless DMX module, Possible variant with rotary BCD encoders instead DIP switch on request
Works with controller	Any DMX512 controller
Operating air temperature	-10°C to 45°C
Storage air temperature	-30°C to 60°C
Relative humidity	5% to 80% non-condensing
Waterproof	No
Ingress Protection	IP00
Weight	28g
Dimensions	70 x 36 x 18 mm
Enclosure	no, PCB only
Mounting options	4x mounting hole diameter 3.2mm

Default package content

- Lady Dimmer PCB

Dimensions



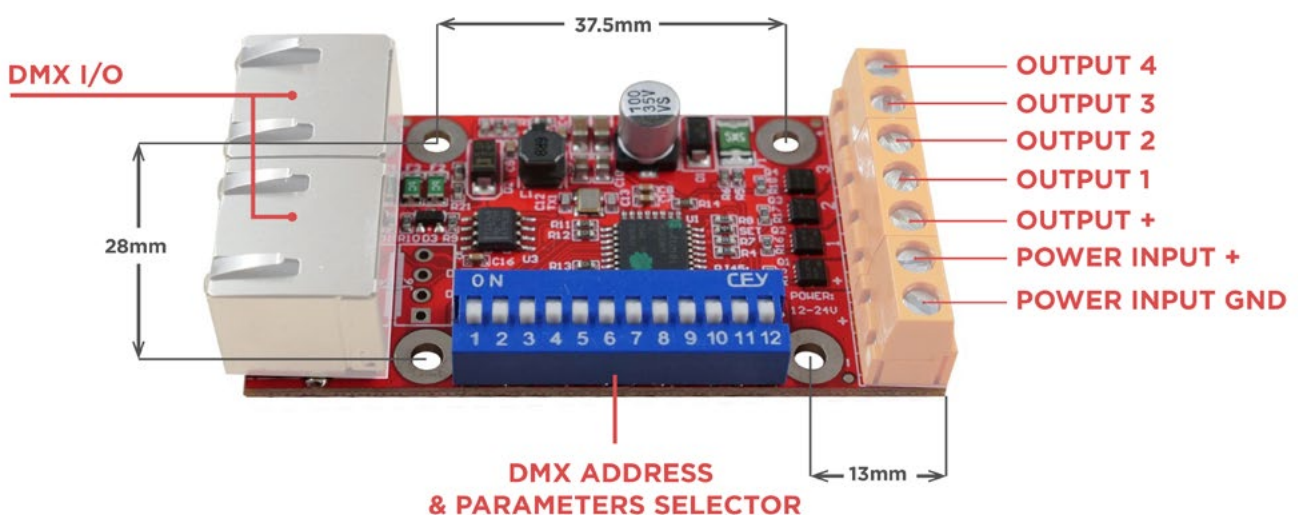
DEVICE VARIANTS

Lady dimmer can be delivered with 3 rotary BCD encoders instead DIP switch on request.

Variant with 3 rotary BCD encoders let you select DMX address in human readable way simply by three rotary encoders representing each digit of DMX address, but this variant DO NOT support following parameters to be adjusted:

- **Test mode (test mode is permanently OFF)**
- **PWM frequency (PWM frequency is permanently high)**
- **blackout on DMX lost (blackout on DMX lost is permanently OFF)**

DEVICE OVERVIEW



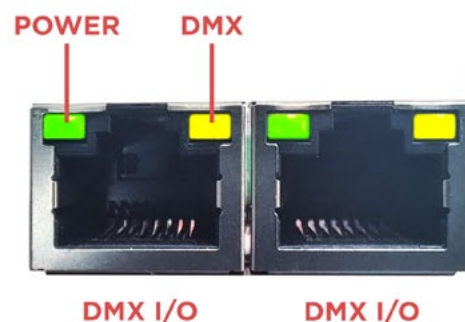
MOUNTING HOLES

Screw head, nuts, and electrically conductive spacers cannot exceed area of mounting hole pad. Suggested screws are M3 DIN 912 or similar with head diameter less than 6mm and plastic spacers.

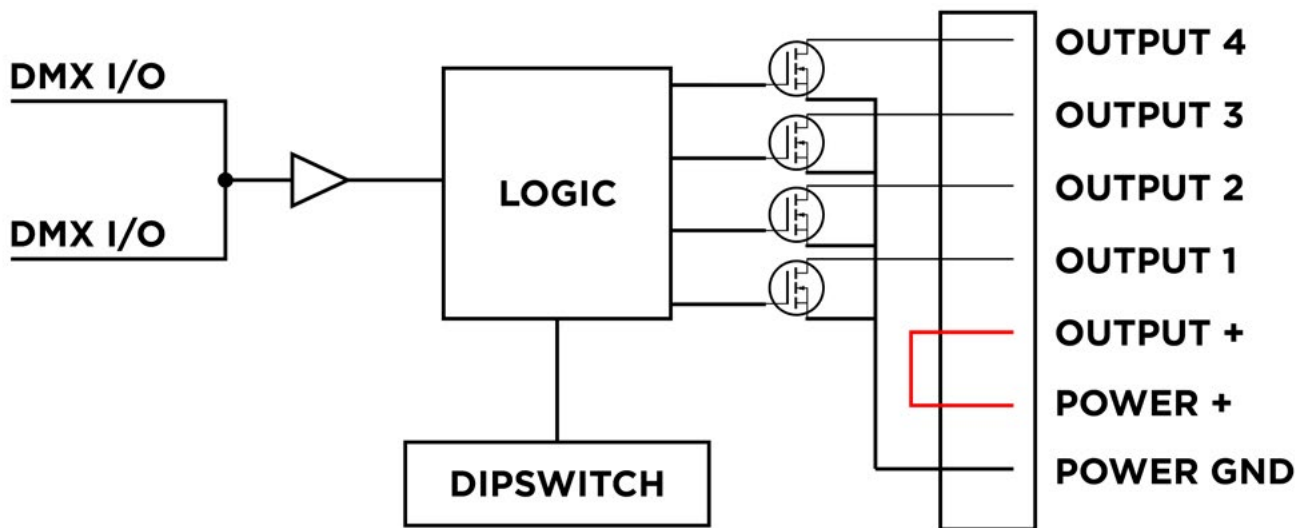
STATUS INDICATORS

Power (Green LED) ON = Power is present
Power (Green LED) OFF = Power is not present

DMX (Yellow LED) ON = valid DMX is present
DMX (Yellow LED) OFF = valid DMX is not present

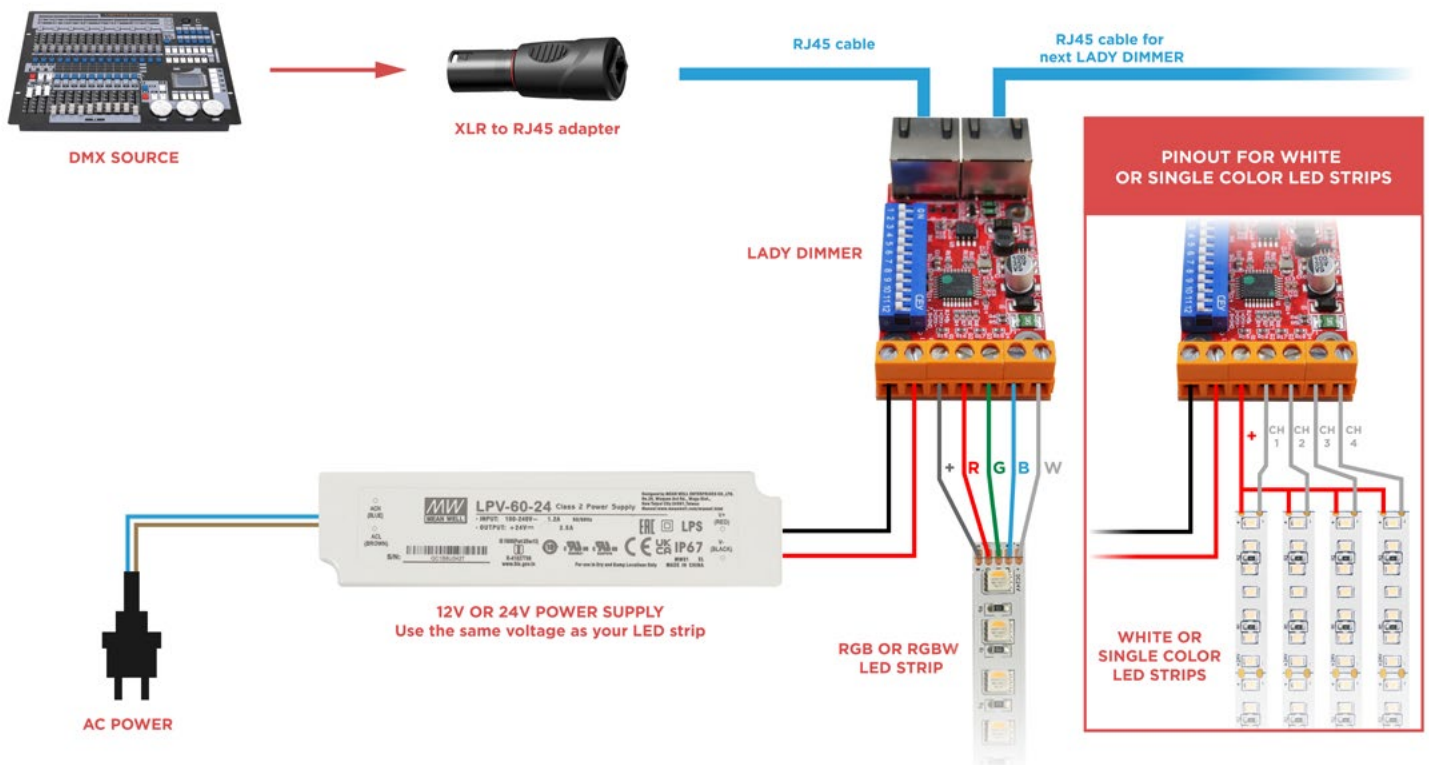


DEVICE BLOCK DIAGRAM

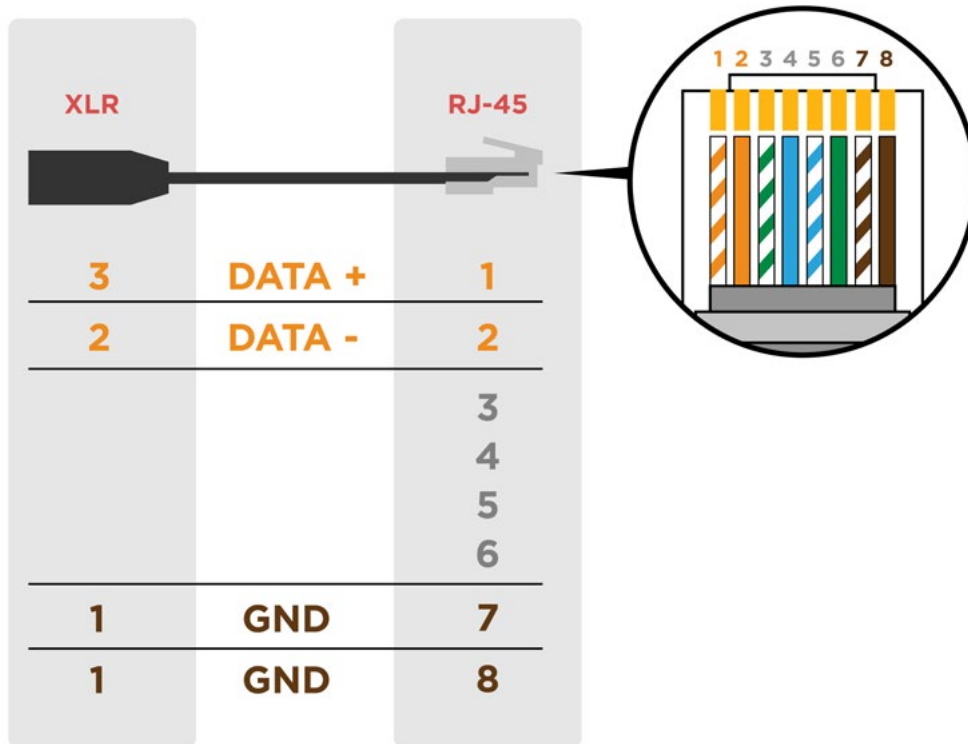


DEVICE CONNECTION

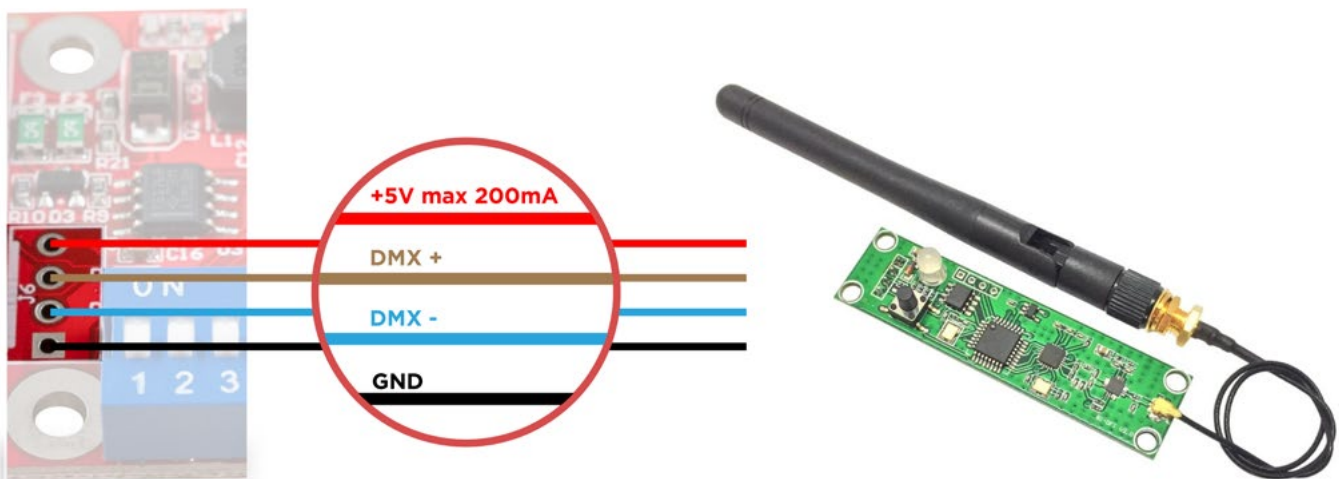
Typical connection with RGB / RGBW LED or single color LED strips:



RJ-45 to XLR pinout:



Pinout scheme for wireless module:



Pads for wireless module

3rd party wireless DMX module

DEVICE SETTINGS

Device parameters are set by DIP switch only.
Use following table for parameter settings:

	Purpose with DIP #10 OFF	Purpose with DIP #10 ON
DIP #1 -DMX address bit / test parameter	DMX address value +1	OUTPUT 1 +33%
DIP #2 -DMX address bit / test parameter	DMX address value +2	OUTPUT 1 +67%
DIP #3 -DMX address bit / test parameter	DMX address value +4	OUTPUT 2 +33%
DIP #4 -DMX address bit / test parameter	DMX address value +8	OUTPUT 2 +67%
DIP #5 -DMX address bit / test parameter	DMX address value +16	OUTPUT 3 +33%
DIP #6 -DMX address bit / test parameter	DMX address value +32	OUTPUT 3 +67%
DIP #7 -DMX address bit / test parameter	DMX address value +64	OUTPUT 4 +15%
DIP #8 -DMX address bit / test parameter	DMX address value +128	OUTPUT 4 +30%
DIP #9 -DMX address bit / test parameter	DMX address value +256	OUTPUT 4 +55%
	OFF	ON
DIP #10 - TEST	TEST disabled = DMX control is active	TEST enabled = DMX control disabled *when any of DIP1-DIP9 is ON then static value to outputs is active based on table above *when ON and all DIP1-DIP9 are OFF then color chaser is active
DIP #11 - PWM Frequency	PWM frequency = 3900Hz	PWM frequency = 490Hz
DIP #12 - blackout on DMX lost	When DMX is lost last state is applied to outputs	When DMX is lost blackout is applied to outputs

WHAT IS A DMX ?

DMX512 (DMX in short) is a lighting protocol created in 1986 mainly to standardize method for lights dimming in theaters & stages. Even it is old it is still widely used today. It is very simple and quite robust protocol where controller sends 512 values AKA 512 Channels. Each channel is just value in range 0-255. You can find a lot of information on internet.

HOW MANY METERS OF LED STRIP CAN BE CONNECTED TO LADY DIMMER ?

For 24V total power cannot exceed 72W per output and 192W total so for most common LED strips:

- Up to 20m (3*6.6m or 4*5m) of typical 24V single color/white LED strips with power rating 9.6W/m
- Up to 13m of typical 24V RGB LED strips with power rating 14.4W/m
- Up to 10m of typical 24V RGBW LED strips with power rating 19.2W/m

For 12V total power cannot exceed 36W per output and 96W total so for most common LED strips:

- Up to 10m (3*3.3m or 4*2.5m) of typical 12V single color/white LED strips with power rating 9.6W/m
- Up to 6.5m of typical 12V RGB LED strips with power rating 14.4W/m
- Up to 5m of typical 12V RGBW LED strips with power rating 19.2W/m

HOW MANY LADY DIMMERS CAN BE CONNECTED TO ONE DMX OUTPUT ?

Based on DMX512 specification you can connect 32 devices in daisy chain. In case you need to connect more than 32 devices, you can use DMX splitter. When total length of DMX cabling is high you should use a DMX terminator on the end of daisy chain.

WHY LADY DIMMER USES RJ-45 FOR DMX ?

Simply because cat5/cat6 cables with RJ-45 are much cheaper, smaller, lighter and much easier to made than regular bulky XLRs.

HOW TO CONNECT RJ-45 DMX TO XLR ?

You can make XLR to RJ-45 converter, or buy a ready made.

WARRANTY

This device has been designed and made using high quality components with several quality checks and testings. Therefore we are proud to provide 5 year limited warranty for this device.

This limited warranty is valid for company or person (user) who purchased new device from us, or our authorized dealer/distributor and warranty period starts from date when user receive this device.

Limited warranty cover:

- **material defects**
- **assembly failures**
- **device malfunction**
- **this device only**

Limited warranty DO NOT cover and is void when this device:

- **has been used for different usage as specified in this manual**
- **has been opened without our permission**
- **has been modified or disassembled without our permission**
- **has been operated wrong way. E.g. over-voltage, over-current, exposed to high electromagnetic fields/discharges such as lighting strikes or ESD events with parameters way outside of HBM model**
- **has been stored or used outside of storage/operating temperature and humidity**
- **has been used in aggressive environment, corrosive environment, dusty environment or in environment with increased vibrations**
- **has been in contact with liquids**
- **has been connected wrong way. E.g. Short circuits, reverse polarity etc.**
- **has been mechanically damaged**
- **got unofficial attempts to firmware updates**

Limited warranty DO NOT cover:

- **shipping expenses to handle defective device.**
- **failures or damage of other equipments connected to this device**
- **user expenses caused by defective device**

For limited warranty claim process:

- **user must be able provide sufficient proof of purchase**
- **use email info@ledstripstudio.com with detailed description of device failure**
- **takes less than 30 days to resolve. This period starts from day we physically receive defective device (device return)**

DISPOSAL OF YOUR OLD DEVICE

This device is an electronic device, and can be categorized as hazardous waste in your country. Dispose of this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.

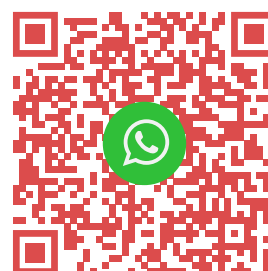
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