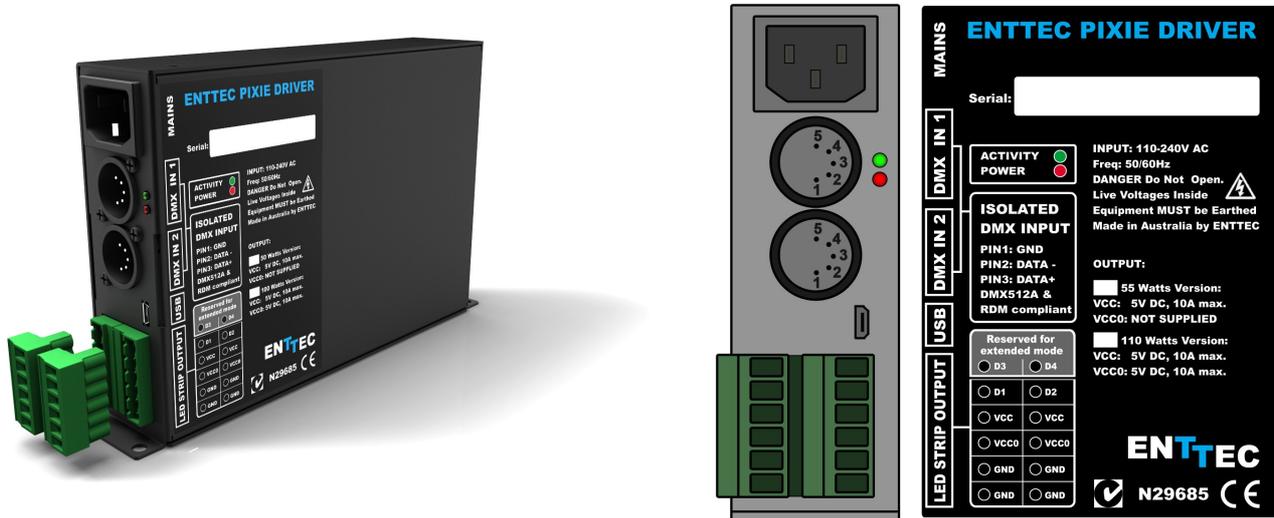




# ENTTEC PIXIE DRIVER

## DMX/USB PIXEL LED STRIP DRIVER



## Features

- Drives 2 DMX universes worth of 5 Volt PIXEL LED strips
- In-Built 5V DC power supply
- DMX512 Controllable and USB configurable
- 55 and 110 watts total output power units available
- Supports RGB pixel strips based on WS2812 & WS2812B LEDs.
- Quick 2 steps test installation: connect your pixel strips to the screw terminal output and plug mains cable to a wall outlet. It is that easy!
- Stand-alone test output sequences (no external data required)
- Show record and playback
- Power and output status LED indicators
- Small, light and easy to hide design
- High quality powder coated metal box
- Scalable design for large projects
- Up to 8 units stackable using standard 19" modular rack accessory (sold separately)
- Ideal for custom shape pixel LED installations
- Standard IEC mains and 5Pin-XLR input connectors

- Plug-unplug screw terminal output connector
- Automatic multi voltage mains input

## Safety

- Do not expose the PIXIE DRIVER to rain or moisture, doing this will void the warranty
- Do not spill water or other liquids into or onto the unit
- Check that the local power outlet matches the required voltage (110 → 240V AC)
- Make all the connections before you plug in the main power
- Do not remove the cover, there are no serviceable parts inside
- Never operate this unit when its cover is removed
- Never plug this unit in to a dimmer pack
- Always be sure to mount this unit in an area that will allow proper ventilation. Allow about 6" (20 cm) between this device and a wall
- Make sure ventilation holes are clean and unobstructed
- Do not attempt to operate this unit, if it becomes damaged
- This unit is intended for indoor use only
- Always mount this unit in safe and stable manner



- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to the point they exit from the unit
- The appliance should be situated away from heat sources
- Make sure the unit is dry and there is no fluids residue before powering the unit after cleaning

supplies (**VCC and VCC0**) which can not be connected in parallel.

The strips supported by the PIXIE driver are based on the WS2812 & WS2812B LEDs; the following tables show the maximum number of LEDs per power source output that the driver could handle when these are driven to their maximum power (full RGB white).

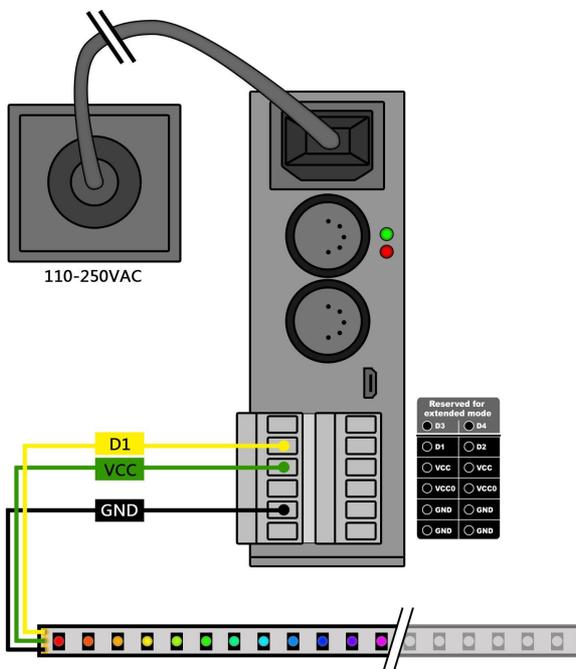
Power Source Output	55W	110W
VCC	300 RGB LEDs	300 RGB LEDs
VCC0	Not Available	300 RGB LEDs
TOTAL:	300 LEDs	600 LEDs

## Start-Up Demo Installation

The PIXIE Driver comes loaded with a scrolling rainbow demo sequence which will run and loop every time you power the unit up so you can get your installation tested straight away once you connect your LED pixel strips.

When any valid data is fed through the DMX or USB ports it will override the demo playback sequence and keep listening to the data ports until you re-power the unit.

If you do not want the PIXIE driver to generate any output when powered up, it can be done by erasing the pre loaded show or overwriting it with your own as further described in the ENTTEC PRO Manager software section.



Use the information in the table to define the maximum supported strips per unit and the length depending on your particular design.

This table can also be used to calculate how many PIXIE drivers will suit your application when one driver is not enough.

**Overloading the outputs could cause the unit and the connected strips to malfunction.**

## LED Status

The Pixie driver comes with two LED indicators located in the front panel.

The red LED indicates that the internal 5 Volts power supply is working properly and the unit is ready to operate and supply power to the strips. If the LED is OFF and you have already connected the mains cable to a working wall outlet, it means that there is a problem in the unit. In this case please contact ENTTEC support.

The green LED indicates the PIXIE status and should be constantly flashing. Please refer to the following table for information about current operating status:

Flashing Frequency	Unit Status
0 Hz	Error Occurred
0.5 Hz	Unit is running normally
2 Hz	Show is playing
8 Hz	Receiving data from DMX
25 Hz	Receiving data from USB

## Operation Modes

The PIXIE Driver can drive LED strips in two ways: **DMX mode** and **Playback mode**. Additionally testing sequences can be sent through **USB**. It is only possible to use one mode at a time and the one with higher precedence will override the others. A general explanation of all the modes is made in this chapter and you can find further

## Power Budgeting

This section explains how many LEDs can be connected to the unit.

Please note that the the 55Watt model has only one power supply (VCC) and the VCC0 output will not be available. The 110Watt unit has two internal power



information on how to use and configure the settings in the ENTTEC Pro Manager software section.

	USB (testing)	DMX	PLAYBACK
Input Data Precedence	Highest	Middle	Lowest

## USB (testing sequences)

The USB 2.0 port is mainly used to configure the unit and download new shows. It also allows test sequences to be run through the free application as described in the Pro Manager software section.

When running the testing sequences all other modes will be overridden by the USB port as it has the highest precedence.

## DMX mode

When data is fed through the DMX ports and there is not active USB sequence, this will be reflected on the strips outputs D1 and D2.

By default the data coming from DMX1 connector will be sent to the beginning of the strips (section 1) through D1 and D2 outputs and the data coming from DMX2 will be sent to section 2 though both outputs.

## Playback mode

Trigger the stored show from the Pro Manager software or by configuring the PIXIE to start playing it on power up.

The PIXIE driver comes with a pre-loaded scrolling rainbow sequence which will playback and loop forever on power up and there are more available pre recorded sequences included with the pro manager software in the Enttec website.

The maximum length of the show depends on the recording parameters.

E.g. The shortest possible show with 510 channels at 40 frames per second, will be 25 seconds, although its length can be increased dramatically if the recording parameters are lowered or the show speed is lower.

If the show has a repetitive nature you could also get it to loop-back forever.

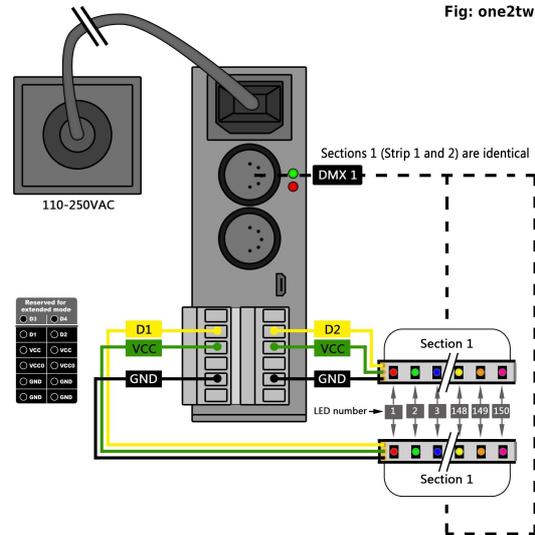
Remember that any data coming from DMX or USB ports will override the playback mode.

## Basic Connections Using DMX Input

Depending on your particular design, you can wire-up strips to the outputs in three ways, we call them "one2two", "two2one" and "two2two".

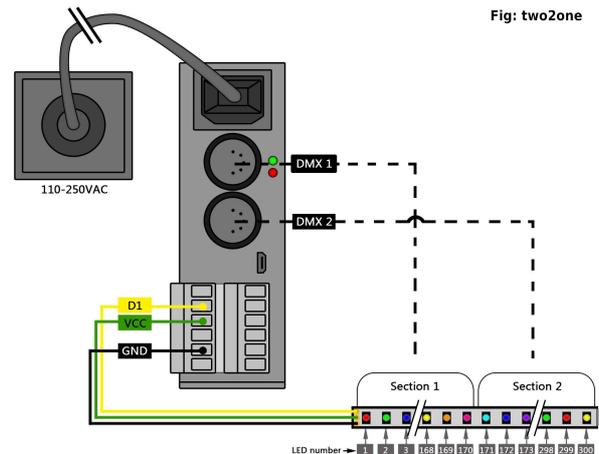
- **one2two:** A single DMX input is printed to two data outputs (two different strips).

Fig: one2two



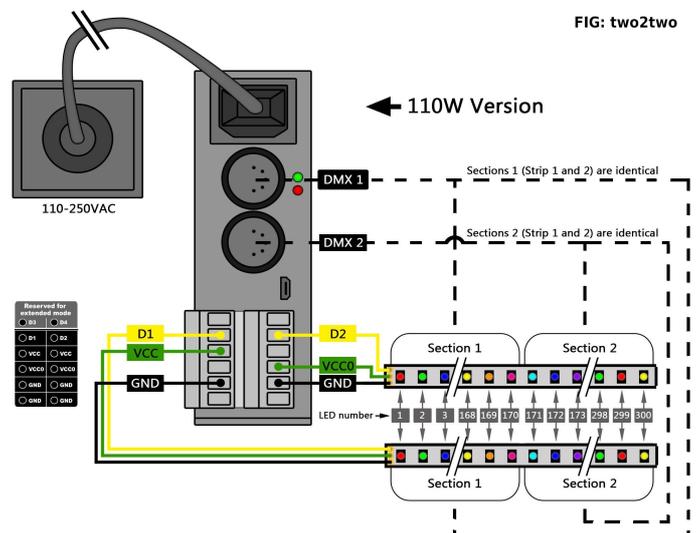
- **two2one:** Two DMX inputs will drive a longer strip from a single output.

Fig: two2one



- **two2two:** If you are using a 110 watts unit and two DMX data inputs are available this wiring could be used.

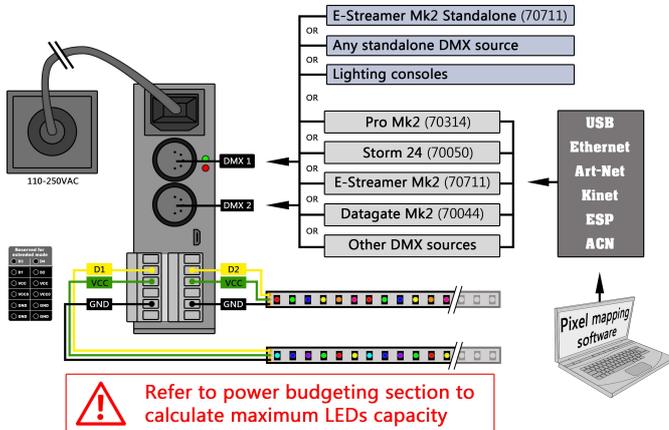
FIG: two2two





## Reference Design

PIXIE driver supports any kind of DMX output device. Here is a reference diagram of connections.



Once the driver has finished installing, you may now power up the PIXIE and plug in the micro USB cable to connect the device to your computer. One end, the micro USB (smaller connector) plug, will fit the USB port in the unit. The other end, which is wider and almost flat in comparison, goes to any available USB port in your computer or you may also plug it into a USB hub.

When you make the connection to your computer, a message should appear (usually a few seconds later in Windows) saying your computer has detected new hardware.

It will be correctly identified as ENTTEC PIXIE DRIVER by your computer.

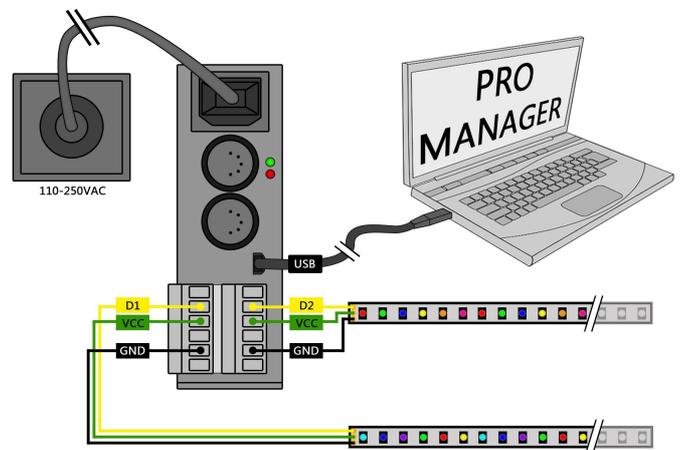
## Installing PIXIE to a Computer (USB)

The PIXIE is supported by drivers for the following Operating Systems:

- Windows XP, Windows Server 2003, Windows Vista, Windows Server 2008, Windows 7, Windows Server 2008 R2. (32 bit and 64 bit versions)
- Mac OS X (Mac OS X 10.4 (Tiger) or later )
- Linux
- Free BSD

This manual will cover the Windows 7™ installation process, by way of example. Others will be similar, but the particulars of how each operating system works in terms of screen shots have been omitted for brevity.

Before plugging in your PIXIE to your computer, please install the driver, by installing the PRO Manager software available from Enttec website. Select “YES” when you are asked to install FTDI drivers and follow the installation wizard.



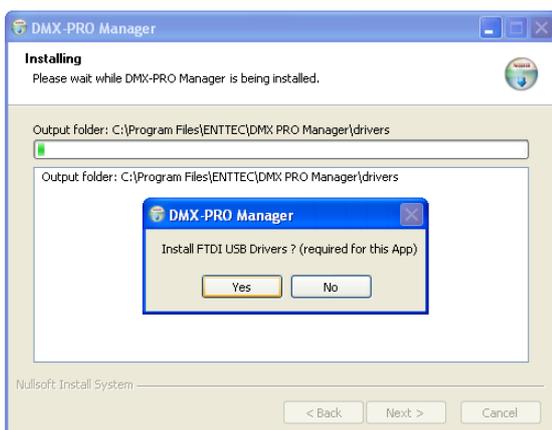
## ENTTEC Pro Manager software

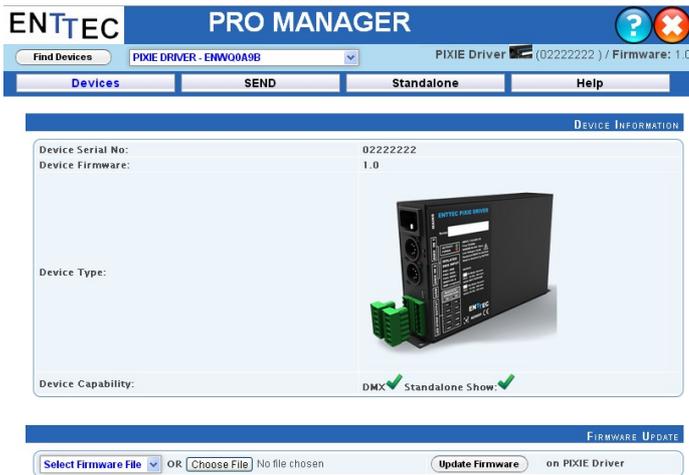
ENTTEC provides a free cross-platform application to configure, test and update the PIXIE. It also allows the user to record a Artnet show into the memory and set-up the standalone mode. The application is available for Windows or Mac from the ENTTEC website.

- Use this application to test, troubleshoot and update the PIXIE, record, playback, set-up standalone shows, send Artnet and predefined output pixel patterns to your strips.
- This application is merely a testing tool and not Lighting Control software.
- It runs inside a browser and it opens up the page by default (<http://localhost:5555/>).

### “Devices” Tab

From the PRO Manager Home page, you can click the “Find Devices” button to search for Enttec devices connected to your computer. Once it finds it, please select the PIXIE from the selection box to start communication.





Once selected, you will see all the device information on the Home Page, and you can update the firmware on the PIXIE using the Firmware Update box. The following steps will guide you on how to update the firmware. Use this procedure to reset the PIXIE to factory default values.

## Firmware Update

Use the latest firmware file meant for PIXIE driver available on the ENTTEC website and upload it using the upload button ("Choose File" - as per Chrome browser).



After selecting the correct file, click on the Update Firmware button and let the update proceed.



Once Finished, the page will automatically refresh, and device information will be updated to reflect the updated firmware.

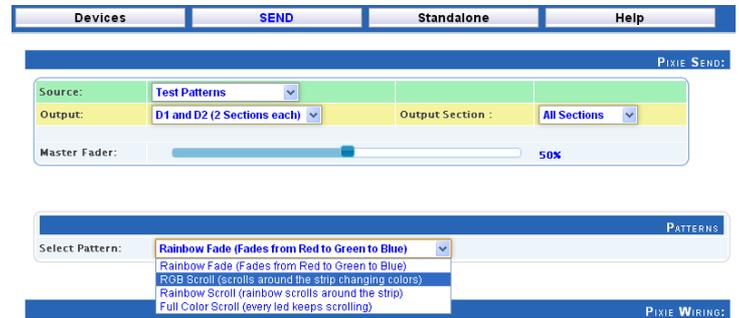
## "SEND" Tab

It is possible to send pre-defined testing sequences, personalised data or Art-Net packets coming from any external source to your strips using the tools provided in this window.



Select one out of the three available sources: "Test Patterns", "Live Artnet" or "From Faders". Then select the Output configuration depending on your particular wiring need.

The Test Patterns mode will start sending predefined sequences to your strips once you select the desired one from the drop down.



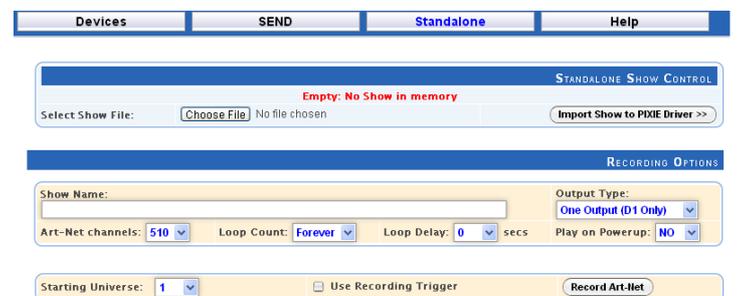
The Live Art-Net section will allow the user to send any incoming valid Art-Net data straight to the pixel strips whilst the pro manager is running and a USB cable is connected. Please select the matching start universe and make sure the Art-net data is being sent to your computer IP address or broadcasted.



Finally, data can be sent to any particular pixel by using the channel faders which allow you to adjust the intensity of any desired LED on the strip.

## "Standalone" Tab

Standalone mode allows you to record (and playback) shows via Art-Net input to PIXIE memory. The duration of the recording depends on the configuration selected before recording. The recorder is smart enough to only record the changing frames, so as to accommodate as many frames as possible.



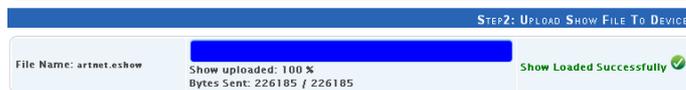
The recording trigger feature will let you select a channel in your show to start/stop the recording when it is greater than a selected value. Once the configuration is all set, you can click on "Record Art-Net" button to start recording the show.



The recording is saved to a file, and is only transferred to the memory when recording is stopped by using the “Stop Recording” button or driving the trigger channel to the right value. Whilst recording, live data is sent to the strips, so you can decide when to stop.



The recording can now be transferred to memory using “Write to Memory” button and the upload to memory progress is shown as it happens.



Once the show is uploaded to memory successfully, the page is automatically refreshed to allow show control on the recorded show.

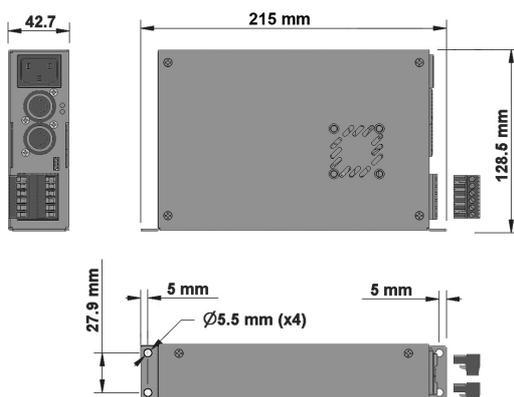


The show can now be played and stopped using the controls on this page. These controls will only be available, if there is a show stored in memory.

You can also export and import recorded shows using the “Export Show to File” or “Import Show to PIXIE Driver” buttons.

## Physical Dimensions

The unit is designed to fit the modular rack accessory (sold separately) which allows stacking up to 8 units in a standard 19” rack using 3 standard rack mount units (3RU).



## Stackable Modular Rack (Accessory)

The modular rack (sold separately) allows up to 8 ALEPH1 CV units to be stacked up using only 3 standard rack units (3RU). Also has an in-built fan at the rear side.



## Specifications

Due to continuous improvements and innovations of all ENTTEC products, specifications and features are subject to change without notice.

Item	Value
Input Voltage	110 - 240V AC
Input Frequency	50/60Hz
Maximum Total Output Power	55watt and 110watt versions
Maximum Current per source (VCC or VCC0)	11 Amps
Maximum Current per Pin (Screw Terminal)	10 Amps
Data Output Type	Serial WS2812 & WS2812B supported
Data Output Channels	4
Control Input	DMX512
Show Recording	From Art-Net using Pro Manager software
Show Download/Upload	Through USB port
Cooling Method	Convection
Ambient Working Temperature	5° to 40° C
Connectors	2x 5-Pin Male XLR for DMX input 1x Double layer 6-Pin screw terminal for outputs 1x 3-Pin IEC C14 Male Socket 10Amps for mains
Protection Rating	IP20

## Ordering Information

The PIXIE DRIVER and compatible products can be ordered from our website or through your ENTTEC dealer using the following part numbers. Different voltage and protocol units are made under special order (please contact us).

Part Number	Description
73540	PIXIE DRIVER (110 WATTS)
73541	PIXIE DRIVER (55 WATTS)
73525	STACKABLE MODULAR 3RU RACK
73527	STACKABLE RACK ADAPTER PLATE FOR PIXIE
70053	STORM XLR-5 (FEMALE) TO RJ45(MALE) DMX 1M CABLE
8PL144	144 LEDS/METRE Pixel tape - 5 Metre Roll
8PL30	30 LEDS/METRE Pixel tape - 5 Metre Roll
8PL60	60 LEDS/METRE Pixel tape - 5 Metre Roll



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