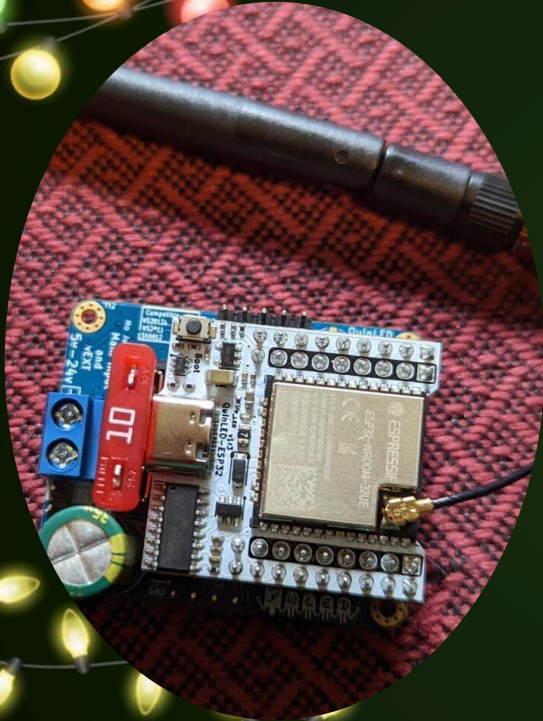


INEXPENSIVE BUT CAPABLE DIG-UNO controller

Tom Hammond - tominohio@gmail.com





WHAT YOU'LL LEARN

Why consider a Dig-Uno controller?

- What is an ESP32?
- Why not a Falcon or Kulp controller?
- Can they work together?



A PICTURE IS WORTH A THOUSAND WORDS

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01

WHAT IS IT?

DIG-UNO FEATURES

INEXPENSIVE

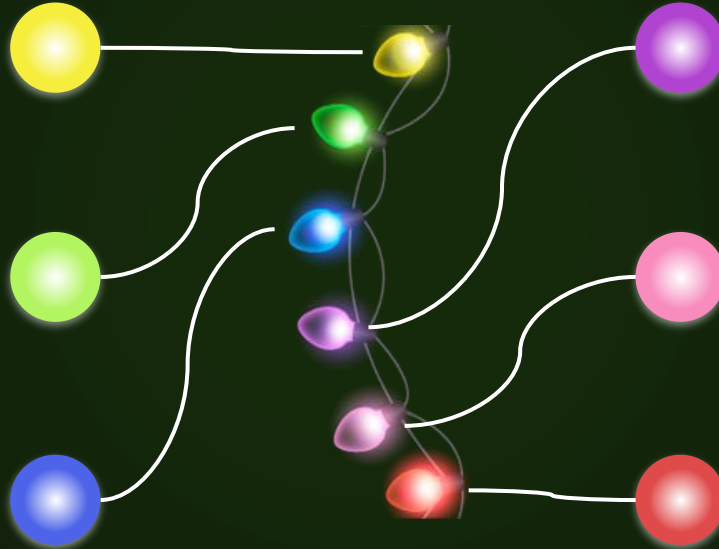
2-port: \$30-\$40

HIGH CAPACITY

2-8 ports, 500-800
pixels/port

FLEXIBLE COMMS

Wi-Fi or Ethernet



STANDALONE

Control with your phone
or xLights

FAST

20-40 FPS

RUGGED

No complicated OS,
boots instantly



WHAT IS ESP32?

Microcontroller, like Arduino
Successor to ESP8266 (Pixel Pop)
32-bit, 1-2 cores, 160-240MHz per core
Low cost, low power
WiFi & Bluetooth built-in
Ethernet capable

DIG VARIATIONS



DIG-UNO

2 ports
Internal/external
antenna
Wi-Fi / Ethernet
Data only
5-24V, fused



DIG-QUAD

4 strings



DIG-OCTA

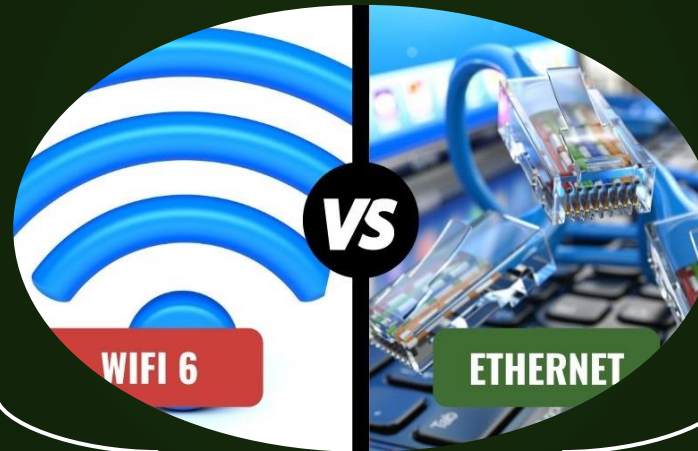
8 Strings
Brain board
Power boards (50-100A)



WI-FI vs ETHERNET

WI-FI

Convenience
Capacity limits
Interference
20 FPS



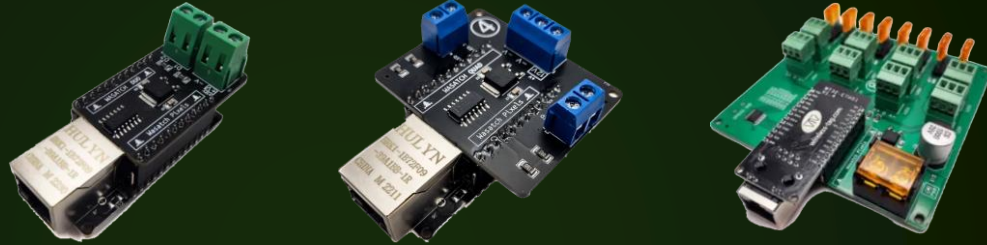
ETHERNET

Extra cabling
Scales well
Reliable data
40+ FPS

OTHER ESP32 CONTROLLERS



Wasatch Pixels



Pros

- 2, 4, 6, 8-port variations
- Ethernet standard
- Optional Falcon/Kulp multiplexer
- Inexpensive
- 8-port power delivery

Cons

- Locked to 5V or 12/24V
- No external Wi-Fi antenna
- 2/4/6 port no power delivery

wasatchpixels.com





02

OPERATION MODES

OPERATION MODES



xLights

Standalone





xLIGHTS

DMX receiver (E131 over
Ethernet / Wi-Fi)

Coexists with other controllers

Supports 20 FPS (wi-Fi) and 40 FPS
(Ethernet)

STANDALONE



Built-in WLED

Controllable via phone / tablet / computer


Wi-Fi access point, web interface

100's of simple effects

Scheduler

External triggers

Smart Home friendly (not Google)



03

HOW TO USE IT

Instructables

www.instructables.com/Wifi-Controlled-Lights-With-QuinLED-Dig-Uno

or search for "Dig-Uno" on Instructables.com



STEPS AT FIRST POWER-ON

1

Connect access point

Dig-Uno initially hosts its own Wi-Fi network, SSID is "WLED"

2

Open website

Dig-Uno hosts a webserver, go to 4.3.2.1 in web browser

3

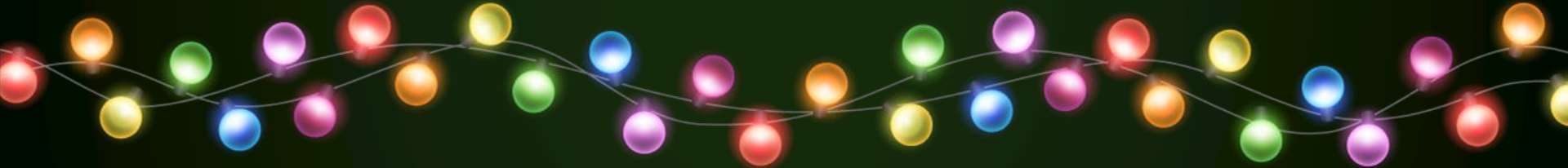
Set SSID or IP address

If you want it to join your home network, do this step

4

pixels on each string

Define the length of each string





Welcome to WLED!

Thank you for installing my application!

Next steps:

Connect the module to your local WiFi here!

WIFI SETTINGS

Just trying this out in AP mode?

TO THE CONTROLS!

Back

Save & Connect

WiFi setup

Connect to existing network

Network name (SSID, empty to not connect):

Your_Network

Network password:

Static IP (leave at 0.0.0.0 for DHCP):

0 . 0 . 0 . 0

Static gateway:

0 . 0 . 0 . 0

Static subnet mask:

255 . 255 . 255 . 0

mDNS address (leave empty for no mDNS):

http:// wled-f88148 .local

Client IP: Not connected

Configure Access Point

AP SSID (leave empty for no AP):

Hardware setup

LED outputs:

1: WS281x

Color Order: RGB

Start: 0 Length: 50

GPIO: 16

Reversed (rotated 180°):

Skip 1st LED:

Off Refresh:

2: WS281x

Color Order: GRB

Start: 50 Length: 1

GPIO: 3

Reversed (rotated 180°):

Skip 1st LED:

Off Refresh:

+

-

LED Memory Usage: 206 / 64000 B

xLIGHTS CONFIGURATION



1

DIG-UNO (Sync page)

- Type: E1.31 (sACN)
- Start universe

2

xLIGHTS (controllers tab)

- Add Ethernet
- Name
- Auto Size: Disable
- IP Address
- Start Universe
- Universe Count



Network DMX input

Type: E1.31 (sACN) ▾

Multicast:

Start universe: 1

Reboot required. Check out [LedFx!](#)

Skip out-of-sequence packets:

DMX start address: 1

DMX mode: Multi RGB ▾

E1.31 info

Timeout: 2500 ms

Force max brightness:


Disable realtime gamma correction:


Realtime LED offset: 0

Directories

Show Directory: Change Permanently Restore to Permanent Change Temporarily Again C:\Users\Me\Desktop\testShow

Controllers

Save 



Add Ethernet

Discover

Name	Protocol	Address	Universes/Id	C
DigUno	E131	4.3.2.1	1-2	1

Name	DigUno
Auto Size	<input type="checkbox"/>
IP Address	4.3.2.1
Priority	100
Managed	<input checked="" type="checkbox"/>
FPP Proxy IP/Hostname	
Start Universe	1
Universe Count	2

STANDALONE USAGE



COLOR WHEEL

Change to a solid color



EFFECTS

Over 100 basic effects

[kno.wled.ge/features/
effects](http://kno.wled.ge/features/effects)



PALETTE


Changes the color
scheme of the
currently running
effect

[kno.wled.ge/features/
palettes](http://kno.wled.ge/features/palettes)



COLOR WHEEL



 Color palette

EFFECTS

Effect speed



Effect intensity



Effect mode

 Search

Solid

Android

Aurora


Blends

Blink

Blink Rainbow

PALETTES



 Color palette

 Search

Default

* Color 1

* Color Gradient

* Colors 1&2

STANDALONE USAGE



SEGMENTS

Pixels can be arranged into segments that have independent effects and colors

kno.wled.ge/features/segments



GROUPS

Pixels can be arranged into "groups" where multiple pixels act as one



PRESETS

Save your current colors, effects, and segments into a "preset" that can be activated later



kno.wled.ge/features/presets/





SEGMENTS

GROUPS

PRESETS


Segment 0  

START LED STOP LED OFFSET

0 9 0


GROUPING SPACING APPLY

1 0 


9 LEDs

Reverse direction

Mirror effect


New segment 1 


START LED STOP LED APPLY

10 19 

9 LEDs

Transition: 0.7 s


Segment 0  

START LED STOP LED OFFSET

0 49 0

GROUPING SPACING APPLY

5 0 


10 LEDs (10 virtual)

Reverse direction

Mirror effect 

+ Add segment

+ Create preset

 Create playlist

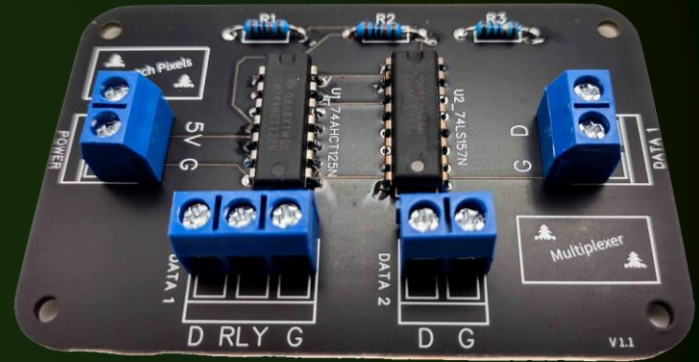
You have no presets yet!

However, there is backup preset data of a previous installation available.
(Saving a preset will hide this and overwrite the backup)

```
{ "0": {}, "1":  
  { "n": "A1", "mainseg": 0,  
    "seg":  
    [ { "id": 0, "start": 0, "st
```


WASATCH MULTIPLEXER

Allows multiple LED controllers to be connected to the same pixel string



wasatchpixels.com/product/wasatch-multiplexer



FOR MORE INFORMATION

Learn more
quinled.info

Where to buy
quinled.info/pre-assembled-boards

THANKS!

DO YOU HAVE ANY QUESTIONS?

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facebook.com/tominohio1

