

Networking for Light Shows

Network Devices

- Hubs/Switches
- Router
- Access Point
- Combination Devices



AusChristmasLighting
australian christmas lighting and computer animation

2026 Melbourne Mini

Switches

- Connects all your devices together
- Routes packets to the correct port

Hubs are old tech and if you have one throw it away and buy a switch



Router

- Connect two (or more) networks together
- Passes traffic between based on IP Addressing



Access Points

- Bridges between wireless and wired network



2026 Melbourne Mini



AusChristmasLighting
australian christmas lighting and computer animation

Combined Devices

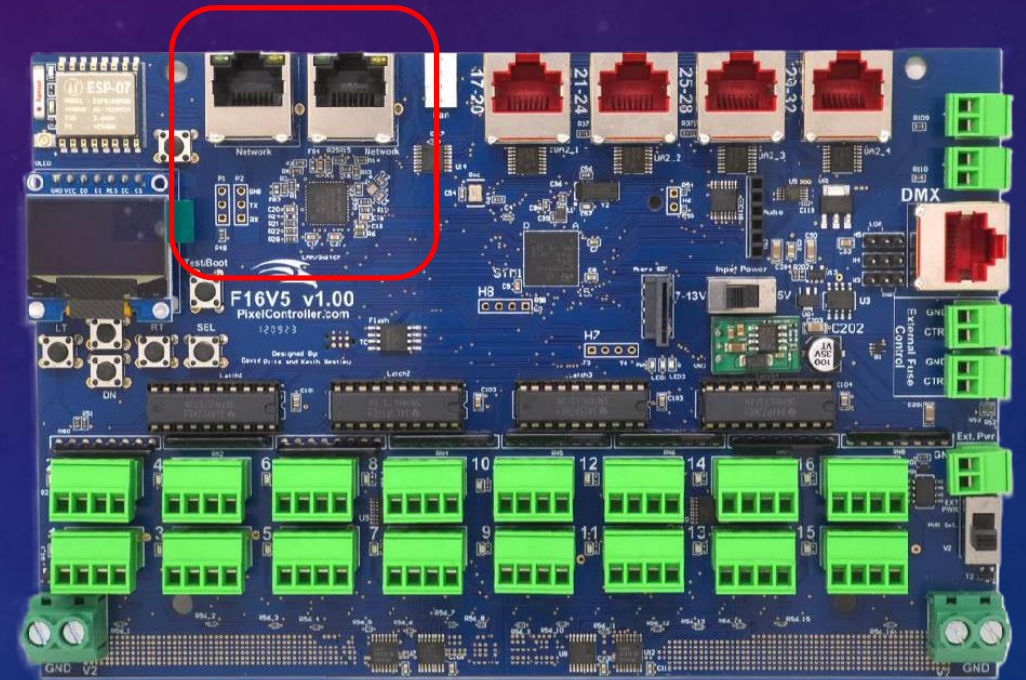
Most consumer routers are a multi function device

- Router
- Modem for VDSL (NBN FTTN)
- Switch
- Wireless AP
- Server – DHCP, DNS, Web Server



This can apply to lightshow stuff too

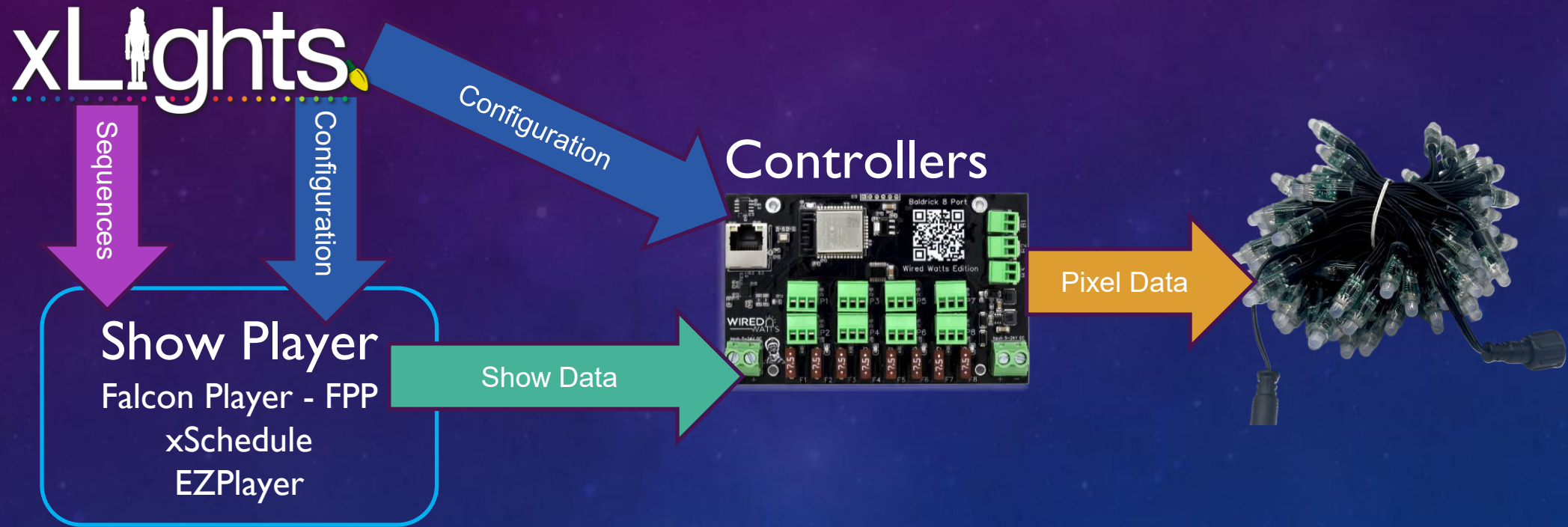
- Some controllers feature a switch to allow “daisy chaining”



AusChristmasLighting
australian christmas lighting and computer animation

2026 Melbourne Mini

Logical Topology of a Light Show



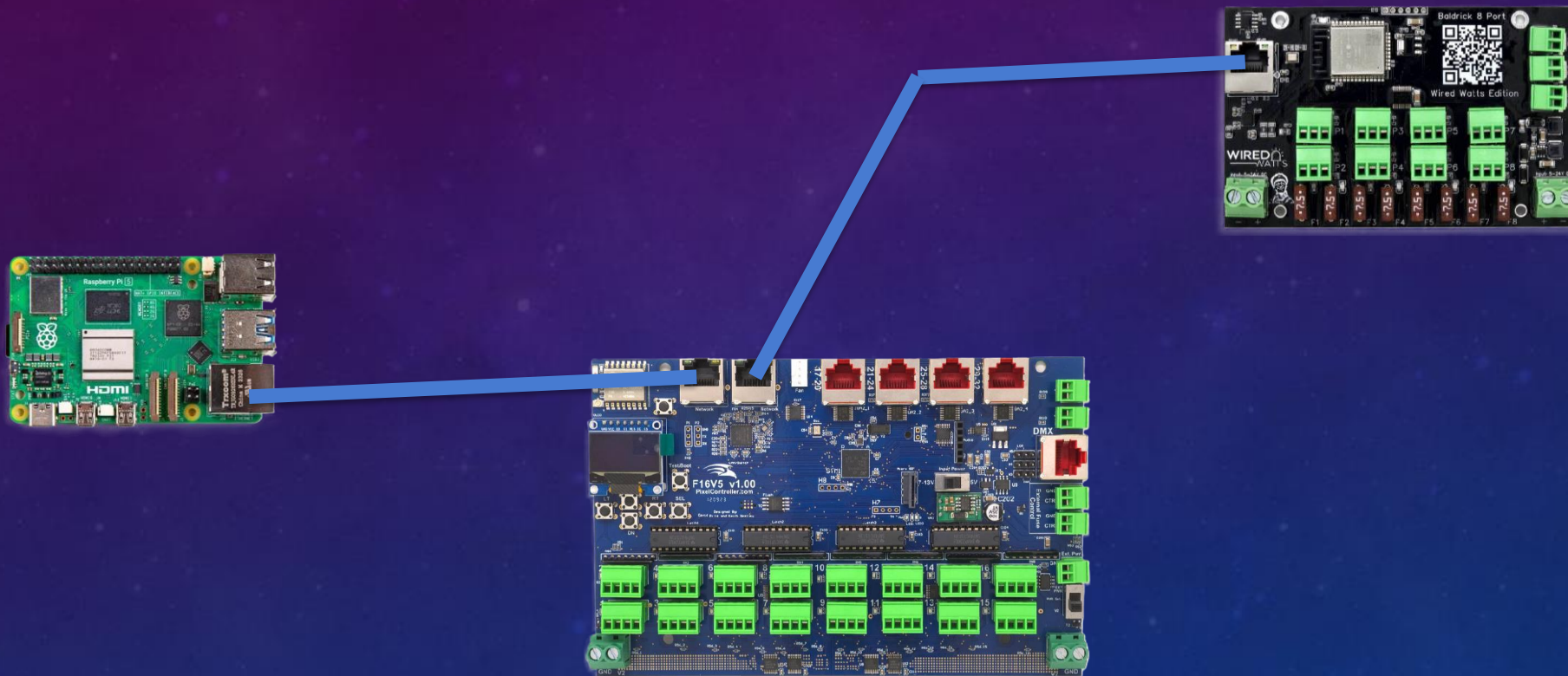
Physical Topology



AusChristmasLighting
australian christmas lighting and computer animation

2026 Melbourne Mini

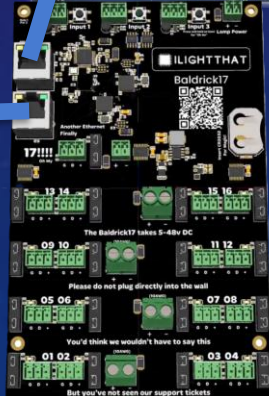
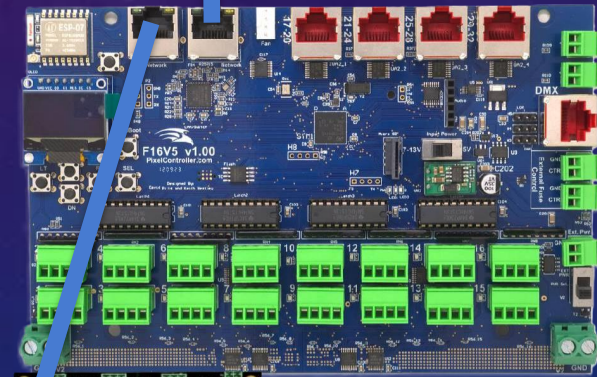
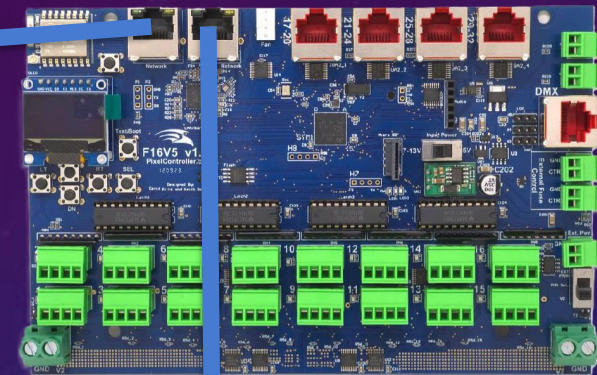
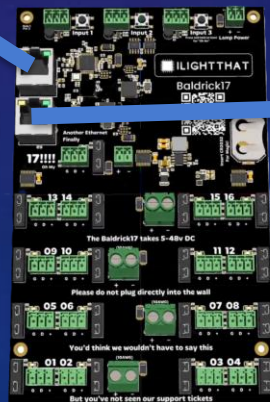
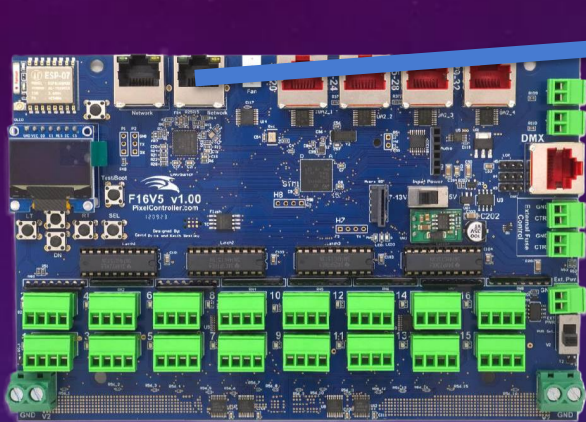
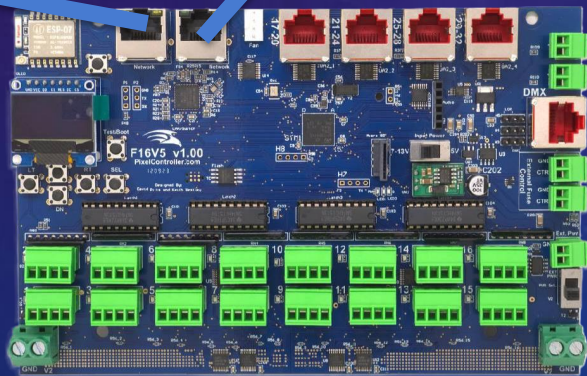
Physical Topology



AusChristmasLighting
australian christmas lighting and computer animation

2026 Melbourne Mini

Physical Topology



Does my show need internet access

- Usually no.
- Raspberry Pi and similar devices without RTC cannot store the time while powered off.
- Updates
- FPP Licencing?

Do I need a separate Show Network

- No
- Requires extra care with IP addressing

Can I just use WiFi?

- Yes, but not recommended.
- If you have to use WiFi, its best if you have secondary show players and only sync over wifi
- You already have to run power, you might as well run network too.



IP Addressing

- Avoid automatic addressing (DHCP)
- Manually configure controllers & Show player
- If connecting to your house network, assign IPs outside of DHCP range

IP Address Basics

- Devices will typically want 4 things
 - IP Address – eg 192.168.0.1
 - Subnet mask – Pretty much always going to be 255.255.255.0
 - Default gateway – The address of your router
 - DNS Server – Could be your router, or a server on the internet eg 8.8.8.8 or 1.1.1.1

What IP range should I use?

- Connecting to your house network? Use whatever range is already configured
- Use the private address ranges – 192.168.x.x, 10.x.x.x
- Keep the first 3 numbers the same for everything on the same network.

Questions?



AusChristmasLighting
australian christmas lighting and computer animation

2026 Melbourne Mini

Thanks

- Presentation files available at <https://blinkylighting/melbourne/>