Raspberry Pi – Falcon Player

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Light Up Ohio 2017

Agenda

You just got your new Raspberry Pi, now what?

I'll show you how to set it up and control your lights wirelessly.

What is the Falcon Player

- Universal sequence player
- Simple browser based configuration
- Allows system tests
- Simple to Start / Stop show
- Allows interfaces to trigger events
- Plays HD video via HDMI or Composite Video output
- Expandable up to very large displays
- Works with most lighting controller protocols
- Can be installed on many different hardware (Rasp Pi, BBB/G)

How to install Falcon Player

- **Detailed instructions**

  http://falconchristmas.com/forum/index.php/topic,483.0.html
- **Step by Step videos**

  http://www.falconchristmas.com/wiki/Tutorials:_FPP_Setup
- **Setting up wireless video**

  https://www.youtube.com/watch?v=2-BAmIJFtZU

How to install Falcon Player

- **Format MicroSD card in PC/Mac using special software**

  https://www.sdcard.org/downloads/formatter_4/eula_windows/
- **Download FPP software and unzip it**

  https://github.com/FalconChristmas/fpp/releases/download/1.8/FPP-v1.8-Pi.zip
- **Copy it to the MicroSD card**
- **Install MicroSD card and a blank USB stick in the Raspberry Pi**
- **Power up Raspberry Pi and it will automatically install (10-25min)**
- **If speakers are connected, the Pi will read off the ip address**
- **All configuration will be done via web browser http://fpp/**

Configuring the Falcon Player

- **Connect Pi to your network and power it up.**
- **Open web browser and go to http://fpp/**

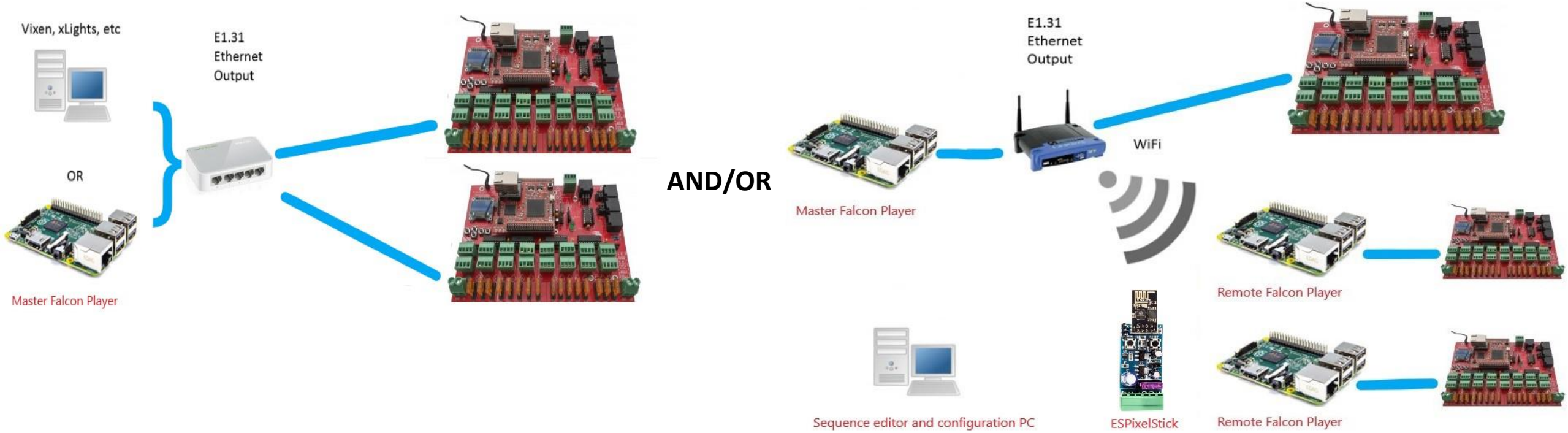
- **The first page that loads is the status page.**

Configuring the Falcon Player

- **Setup FPPD Mode**
  - (Standalone)
  - (Master) When using multiple FP, this unit sends the sync data packets
  - (Remote) Distance FP that is synced with the Master FP
  - (Bridge) Sets the FP as a e1.31 lighting controller
- **FPP Settings**
  - Select the External Storage Device
    - Can you the same microSD card if the size is large enough for the sequences, music, videos
    - USB flash drive
    - USB Hard drive or SSD

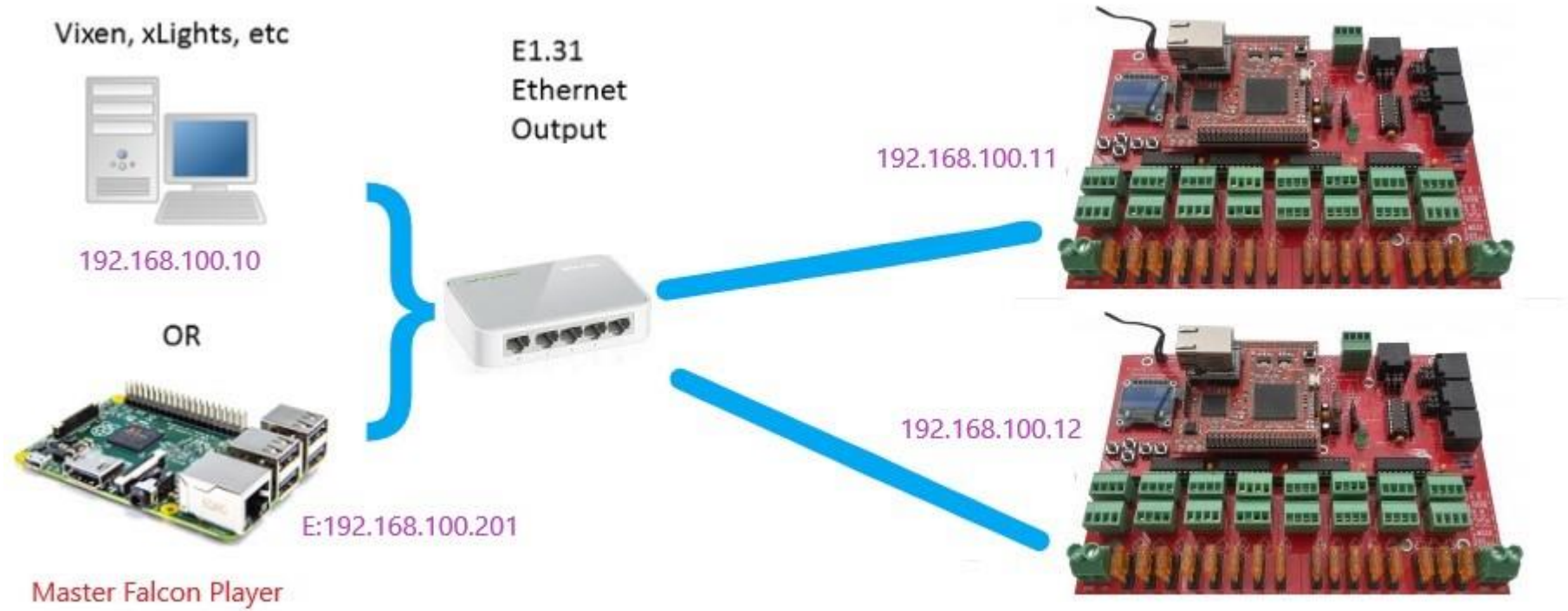
Falcon Player - Networking

- **Many options to network the FP with controllers**



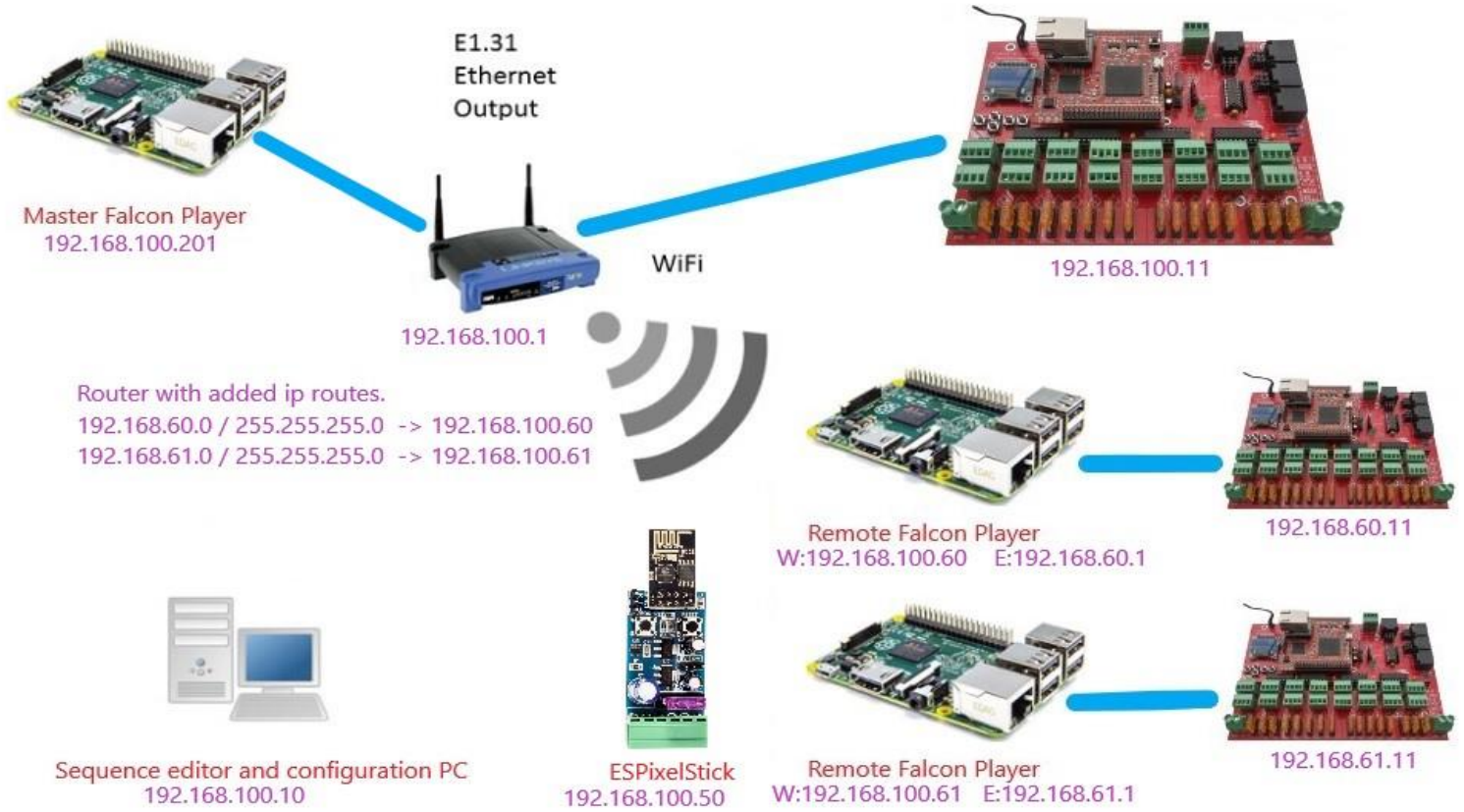
Falcon Player – Network Setup

- **Make a network plan and document, document, document!!!!**



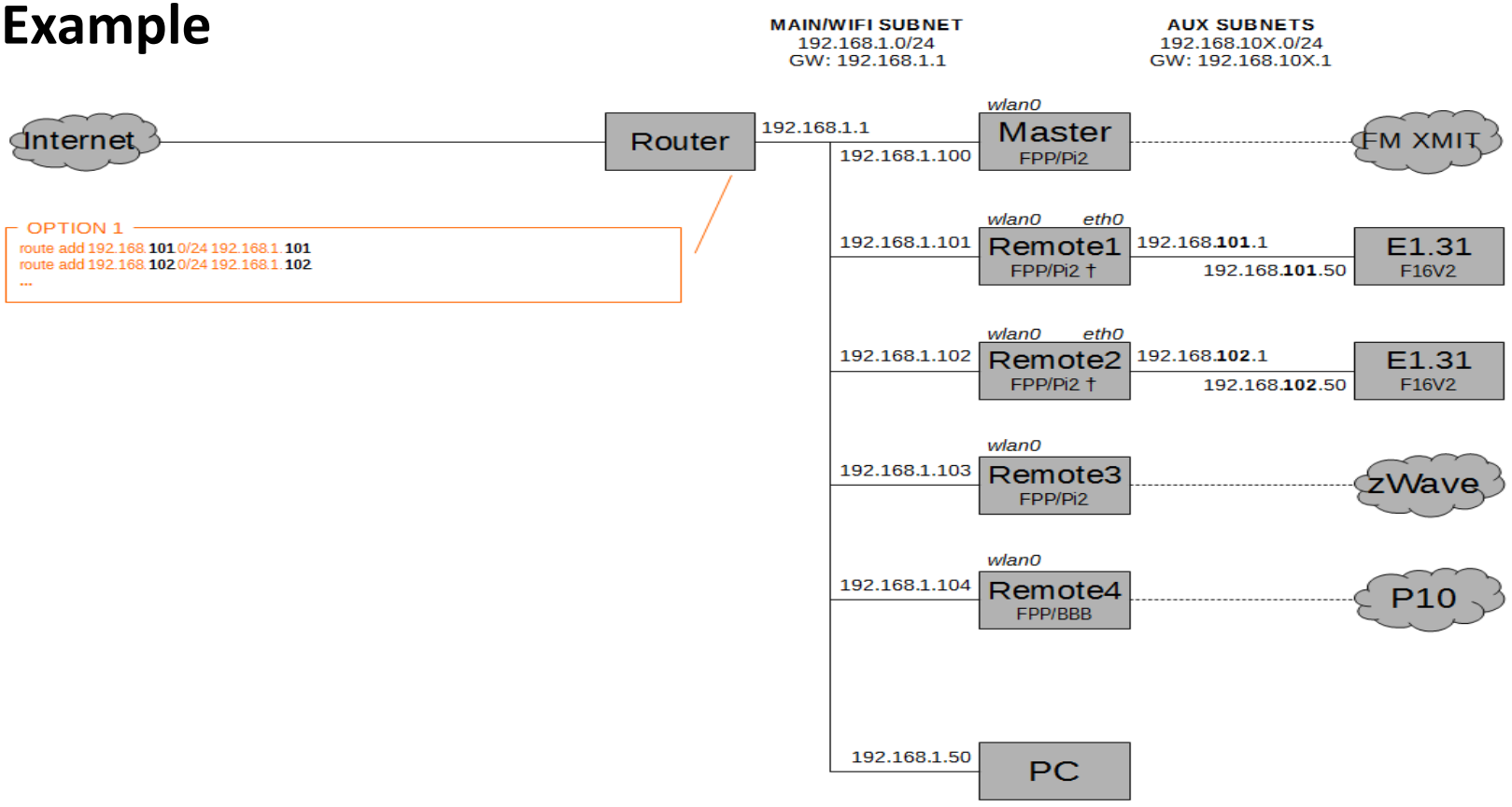
Falcon Player – Network Setup

- **Make a network plan and document, document, document!!!!**
- ***** If you are going to be using wireless in a Master/Remote setup your router needs the feature to add additional routing tables. *****



Falcon Player – Network Setup

- **Additional Wireless Example**



† "Enable Routing" option must be enabled in FPP ≥ 1.6

Falcon Player – Multisync

- Allows you to sync multiple FP across the network.
- Example:
  - Player 1: Video player in the house
  - Player 2: FP in the yard
  - Player 3: Video player in neighbors yard
  - Player 4: P10 LED Matrix
  - Player 5: FP on the roof
  - Player 6: FP across the street

E1.31 Transmissions

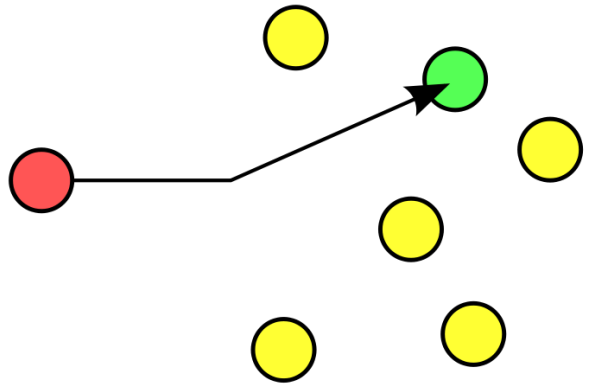
Unicast vs Multicast

E1.31 Unicast

“Unicast” transmission sends IP packets to a single host on a network.

It is a method of sending data across a network where two devices, the control PC and the e1.31 controller, are directly connected (or thru a network switch or router) and the channel control information meant for that specific controller is the only data sent to that controller. Unicast is a point to point protocol and only the lighting channel information is sent to the device with the matching IP address.

Computer sending data to one host:

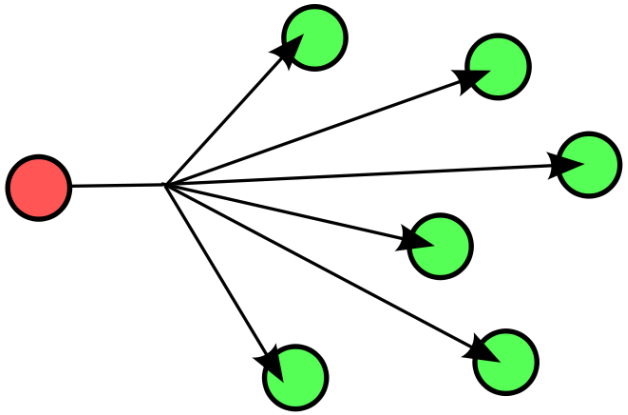


E1.31 Multicast

“Multicast” transmission sends IP packets to all hosts on a network.

It is a method to send data across a network where the PC broadcasts the data to all devices connected to the network subnet and the information about the channels are sent to all e1.31 controllers and other non controllers connected to the network. Multicast is a point to multipoint broadcast where the controllers need to listen to and only respond to information they are configured to use. Depending on the device and the number of universes of data sent it can overload the device and possibly end up causing a loss of data. Note however that this is not an issue for most smaller displays until you get into the dozens of universes. With Multicast you must also have a unique IP address for each controller so that you can access its webpage that allows configuration. The data is received on multicast IP address not on the configuration IP address.

Computer sending data (broadcasting) to all hosts:



Falcon Player

Thank You!!

Web Forums

Australian Christmas Lighting: http://auschristmaslighting.com/forums/
Do It Yourself Christmas .Com: http://doityourselfchristmas.com/forums/
Do It Yourself Christmas .Org: http://www.diychristmas.org/
DIY Light Animation: http://www.diylightanimation.com
Falcon Christmas: http://falconchristmas.com/forum/