Do It Yourself Christmas Light Controllers
Perception of DIY
Perception of DIY Myth
Perception of DIY Reality
Why DIY?

• Cost savings
• Bigger variety of layout options
• Sense of accomplishment
• FUN!
Vixen

- Free software
- Plug-ins for most DIY controllers
- Loaded with features
DIY Christmas Light Controllers

How do I start building the controllers I find on the DIY sites?

- Download PCB files and etch your own board, order parts from supplier
- Buy printed PCBs from someone with a stock, order parts from supplier
- JOIN A COOP
DIY Christmas Light Controllers

What is a COOP?

A Co-operative effort where people order parts together, as a group, in order to receive quantity discounts from suppliers.
DIY Christmas Light Controllers

Advantages of a COOP

- Members can save as much as 30%, or sometimes more, on parts kits.
DIY Christmas Light Controllers

Disadvantages of a COOP

• Because a coop manager has to collect, and sort all the parts, it can take several weeks to receive your order.
DIY Christmas Light Controllers

• How a COOP works:
  - Member must get permission from mod to run a coop
  - COOP manager gives estimated cost per parts kit
  - COOP manager sets a cutoff
  - Anyone can sign up
DIY Christmas Light Controllers

• How a COOP works:
  - Once the coop closes, manager determines exact pricing, and collects money from everyone
  - Manager orders parts, then sorts kits, and ships
  - COOP almost always includes everything you need to build a complete controller
Onboard VS. External SSRs

- A Solid State Relay, or SSR, is an electronic device that uses low voltage input to switch high voltage on or off.
Onboard VS. External SSRs

- The two main components of an SSR circuit are the triac, and the optocoupler
Onboard VS. External SSRs

- The triac is a type of semiconductor that performs the actual switching of the current. The opto is a device which forms a barrier between the high voltage and the low voltage side of the circuit.
Onboard VS. External SSRs

Onboard SSRs - All the parts necessary to turn lights on and off are contained on one circuit board.
External SSRs

The components of the circuit that perform the actual switching of current are located remotely from the controller part of the circuit.
Onboard VS. External SSRs

- External SSRs connect to controllers using cat5
- Each SSR needs its own power source
Onboard VS. External SSRs
• Lynx
• Lynx Freestyle
• Lynx Express
• Lynx MR16 Controller
• Lynx SSR4

• Lynx Splitter
• Lynx Dongle
• Wireless DMX
• Lynx Aether
Lynx DMX Dongle

- Connects to computer via USB port
- Works with software to send out 512 channels of DMX
- Designed as replacement for Enttec DMX PRO
- Cost = about $50 to build
Lynx Splitter
• 4 channel DMX splitter
• Costs about $20 to build + case
• Lynx Freestyle
  - 128 Channel Controller
  - Runs on DMX
  - Uses External SSRs
  - Cost: $73.05 in a coop (includes case)
    = $0.57 / channel
• Lynx SSR4
  - 4 channel External SSR
  - Can be made into a standalone DMX controller with the addition of a few parts
• Lynx SSR4
  - Cost in coop as plain SSR = $14.33
  - Cost in coop as DMX controller = $24.82 or $6.20 / channel
  - Both prices include case
Cost for full 128 channel setup using Freestyle + 32 SSR4s

$531.61

= $4.15 / channel
• Lynx MR16 Controller
  - 12 volt, 16 channel DMX Controller
  - Can handle up to 12 MR16s per channel
  - Works with any 12V MR16, but designed around Kevin’s MR16s
• Lynx MR16 Controller
  - Cost in coop
    $39.67 Including case

  = $2.48 / channel
Lynx Express

- 16 channel DMX controller
- Built in DMX splitter
- Onboard test function
- LED channel display
Lynx Express

• Built in LED snubbers

• Light Normalization Technology

• Built in Wireless capability
Lynx Express

- Cost in most recent coop...

$59

Including Heatsink
Light Normalization Technology

- Custom dimming curves are created for every type of light string that you have
Light Normalization Technology

- Each dimming curve turns the lights on at level 1, and reaches full brightness at level 255
Light Normalization Technology

- All light strings, regardless of brand, both LED and incandescent, dim at exactly the same rate through the entire range, 1 - 255
Lynx Wireless DMX-

- Can operate on 3 different channels, selected by a jumper
- Ability to run 3 DMX universes simultaneously
- Capable of transmitting an entire DMX universe at 25ms timing
Lynx Wireless DMX- Tx/Rx

- Connects to a DMX source
- Line of sight range of at least 500ft
- Can be switched from Tx to Rx by moving a jumper
Lynx Wireless DMX- Tx/Rx

• Estimated cost to build = $40
Lynx Wireless DMX- LE/RX

- Plugs directly into Lynx Express controller
- Receives wireless DMX from transmitter
- Can be modified to connect directly to any Lynx device
Lynx Wireless DMX- LE/RX

- **Cost to build = $20**
Lynx Aether

- All in one RGB spot light
- Built in wireless
- Uses 6 high power RGB LEDs
- 4 channels for R, G, B, and W
- Converts from Wide flood to Spot light with lenses
- Still in Beta testing
Lynx Aether

Estimated cost in Coop = $90
RGB Pixels

- 12 volt RGB light source
- Runs on DMX
- Daisy chain together with standard cat5 cable