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Expat Audio LLC

BUILDING YOUR OWN EDEN MIC PRE

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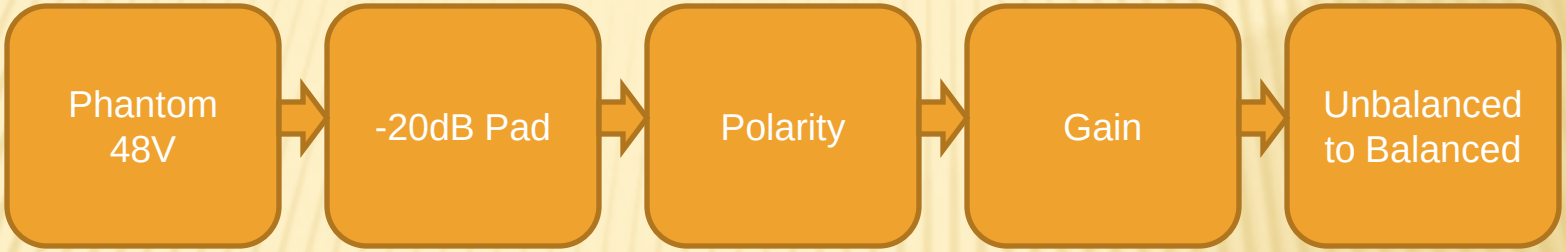
BASIC MIC PRE SECTIONS



Phantom Power is typically used for condenser microphones, not required for dynamic or ribbon microphones

Pad (Attenuator) is used for “hot” mic signals

Polarity to aid with phase input

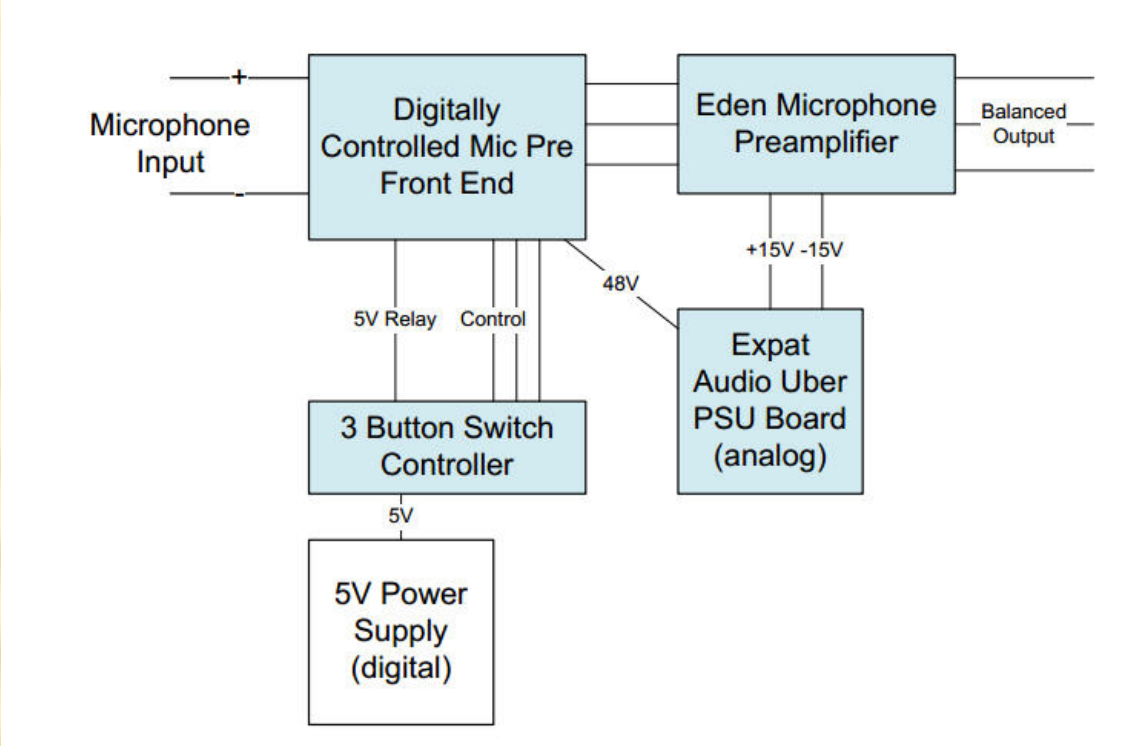
Gain section typically controlled with a variable resistor (pot)

Unbalanced to Balanced converter is optional, but strongly recommended.

ADDITIONAL CIRCUITRY

- Control
  - Mechanical switches or digital control?
- Power Supply
  - Analog Supplies typically need to be ±15V
  - Optional Digital supplies only required if you have digital control and relays.

SYSTEM ARCHITECTURE WITH EXPAT AUDIO



DON'T FORGET DC BLOCKING CAPS BETWEEN THE FRONT END AND EDEN IF YOU HAVE A PHANTOM POWER SOURCE!

HOW TO DO IT WITH EXPAT AUDIO

- Eden Mic Pre
  - Preassembled and tested
- Uber Power Supply
  - Hand Solder *(easy!)*
- Digitally Controlled FE
  - Hand Solder
- 3 button controller
  - Hand Solder

POWER SUPPLY

- ALWAYS Check connections when dealing with mains power!
- ALWAYS Make sure you have a fuse

- Homework, Homework, Homework.
  - http://sound.westhost.com/psu-wiring.htm

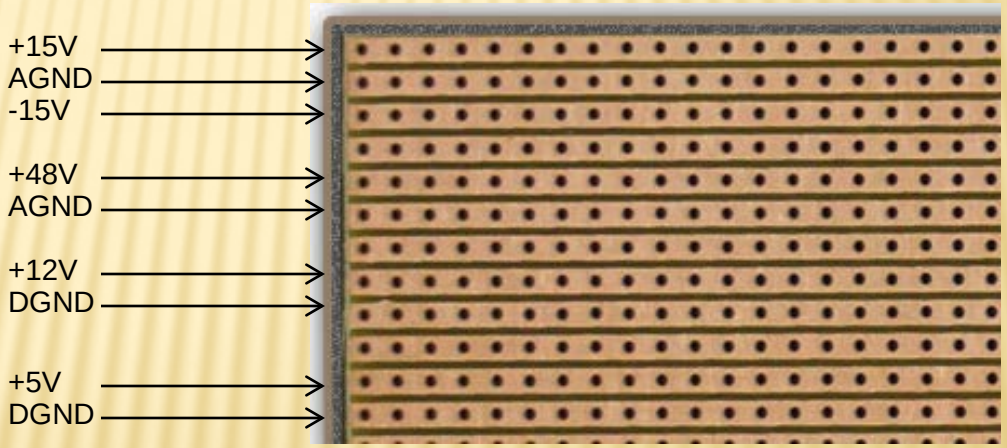
- If you are unsure, hire a professional in your area.

UBER POWER SUPPLY AND TRANSFORMER

- Each Eden board consumes about 50mA on the ±15V Rails.
  - Uber Power Supply has an excel calculator to help.
- The controllers and relays (in a dig control situation) should run from a separate 5V rail.
  - LED’s are 10mA each, Relays are 20mA each.

POWER RAIL DISTRIBUTION

- I like using strips of veroboard with pin headers for power distribution.
  - In the USA, this is known as “Stripboard”



EXTRAS

- 19” Rackmount case.
  - You can fit 4x 3 button controllers in a 1U case!
  - Standard Neutrik XLR connecters can be cut out using a 24mm hole punch
  - Front Panels can be customized online at frontpanelexpress.com
  - Check out collectivecases.com

MEASURE TWICE CUT ONCE! ☺

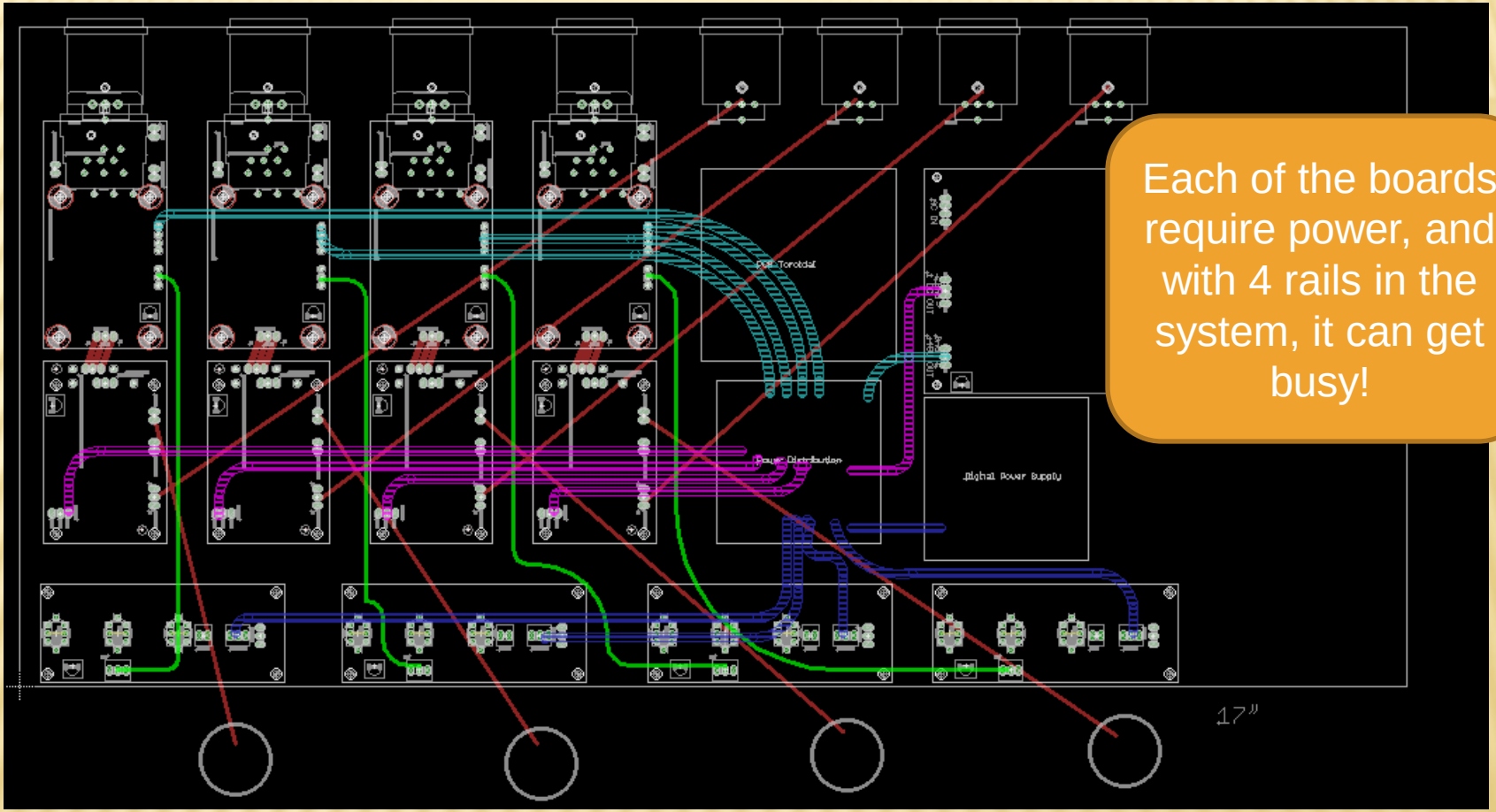
GREAT RESOURCES

- Expataudio.com
  - download the user manuals for each board!
- INA163 Datasheet from TI.com
- Great Notes from That Corp
  - http://www.thatcorp.com/datashts/AES129_Designing_Mic_Preamps.pdf

WHERE TO BUY THE PARTS?

- 1U Case from Collective Cases
- Expat AudioPCB's and Modules
  - 1x 4Ch Discount Pack from Expat Audio
  - 1x Uber PSU Board from Expat Audio
  - 4x 3 button controllers from Expat audio
  - 4x Mic Pre FE boards
- Amazon:
  - 40 pin headers : Item: B00FR19WQA
  - 100x 8mm, M3 countersunk screws: B000NHTPPQ
  - 100x 6mm M3 button head screws: B000FN5SLI
- Antek
  - AN-0215 Toroidal Transformer
- Collective Cases Eden Case / Par-Metal 10-19112x
- Mouser Pre-Saved Bill of Materials
  - Don't forget to buy knobs for the gain control!

WIRING THE BEAST

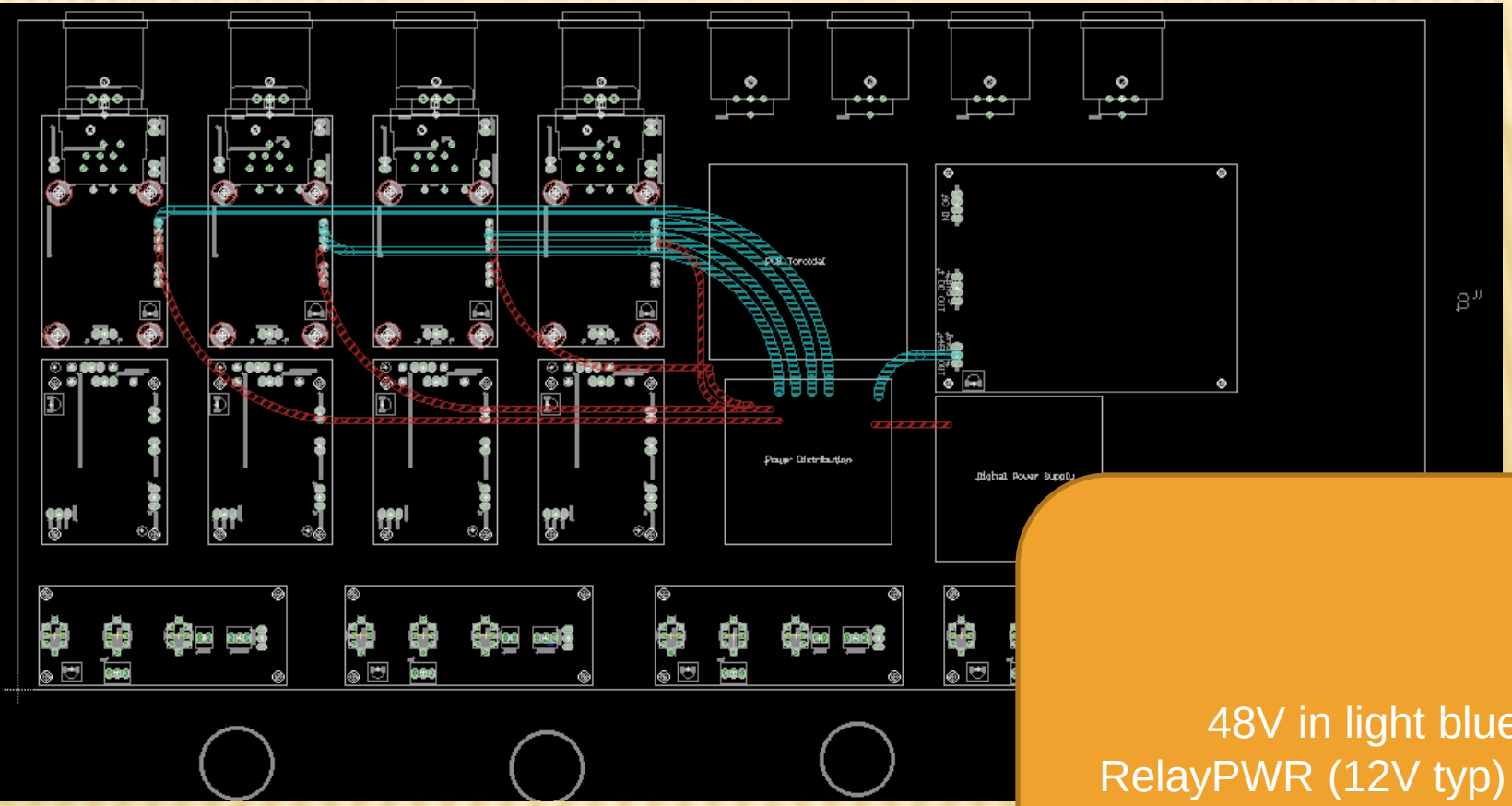


Each of the boards require power, and with 4 rails in the system, it can get busy!

+/-15V POWER

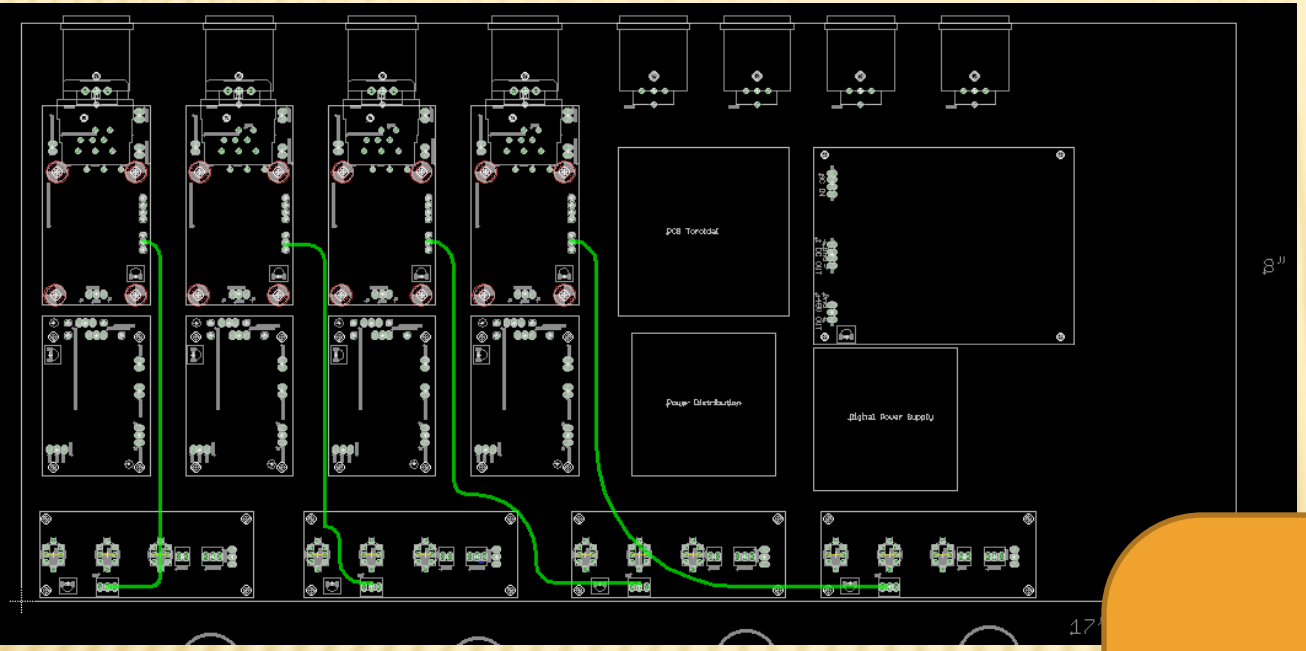
The +15/-15V Power rails are generated on the Uber PSU board, which is then brought over to the power distribution board.
The Power Distribution board simply splits the rails on to multiple headers, so simple 0.1” cables can be used.

PHANTOM AND RELAY



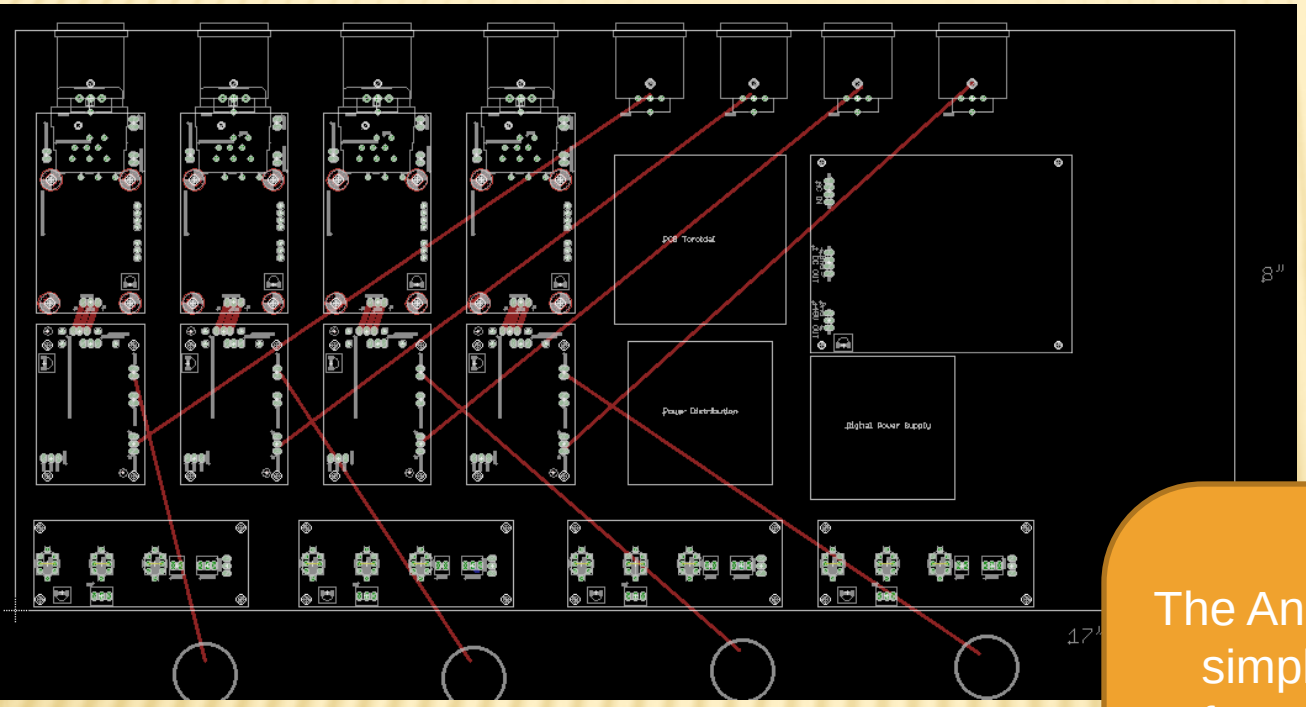
48V in light blue
RelayPWR (12V typ) in red

DIGITAL CONTROL



3signals from each front panel board control go to each channel.
These signals are referenced to digital ground.

ANALOG SIGNALS



The Analog Signal Path is kept simple… come in from the female xlr to the front end, then into an Eden,then out to the maleXLR.
Note the extra wiring to the pot on the front of the board.

GROUNDS

- There are two separate power rails at work in this system
- Analog: +/-15V,48V are both connected to analog ground
- Digital: Relay Power, front panel controller (typ 12V and 3V3)
- Keep them separate until the IEC connector.