

Why Would Anyone Want AC Power?

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Isolation Benefits

- Isolation is easy and efficient with simple transformers
- Isolation of DC power is much more difficult
 - Requires Flyback DC-DC converter
 - Controller chip
 - Low ESR capacitors
 - Transformer (with feedback winding)
- Proper selection of AC frequency & waveform will keep magnetics small and emissions low
 - High audio, low ultrasonic (10kHz to 50kHz) sine wave
 - Sine wave generation is not that hard and needs to be done only once for the entire hub

Efficiency and Cost

- Transformer is more efficient than DC-DC converter
- You have to buy a transformer or power inductor with DC-DC converter anyway
- Lower parts count
 - The complicated part (sine generation) is done once for the entire hub
 - DTE requires a transformer, diode(s) and passive filter