

IEEE 802.3 PoE Plus - March 2005

PoE Plus Output Voltage Specification

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Telephony Products

PROPOSAL

Maintain the current 802.3af output voltage specification of 44Vdc to 57Vdc for PoE Plus.



JUSTIFICATION

Specifying the output voltage to have a range between 44 Vdc and 57 Vdc will allow the PSE to incorporate a 48 volt battery pack and provide integrated battery backup.



48 Volt Battery Pack

48 Vdc - Nominal Output Voltage (4-12Vdc batteries)

55 Vdc – Float Charge Voltage

42 Vdc – Low Voltage Disconnect (44 Vdc OK)



Backup Power Duration

Based on SEI's experience, the average telephony backup time is approximately 2 hours. However, many of our customers require 8 hours or more of backup time. (SEI equipment powers over 1,000,000 Centrex ISDN phones.)

Security cameras may require even longer times.

Long term backup of Wireless Access Points could also be important if wireless phones are used or if mission critical data services are being provided.



Existing UPS Backup Infrastructure

- Typical 24 port Ethernet Switch requires 40 watts of power.
- Existing UPS will be sized accordingly, relatively small.
- PoE load will require much larger UPS for both power and backup time.



PoE Power Requirements

A fully loaded 24 port 802.3af installation requires approximately 370 watts.

If PoE Plus max power is 30 watts per port, then a fully loaded 24 port installation would require approximately 720 watts.

This requires a substantial UPS.



Two UPS Options

External AC to AC UPS

Integrated DC UPS



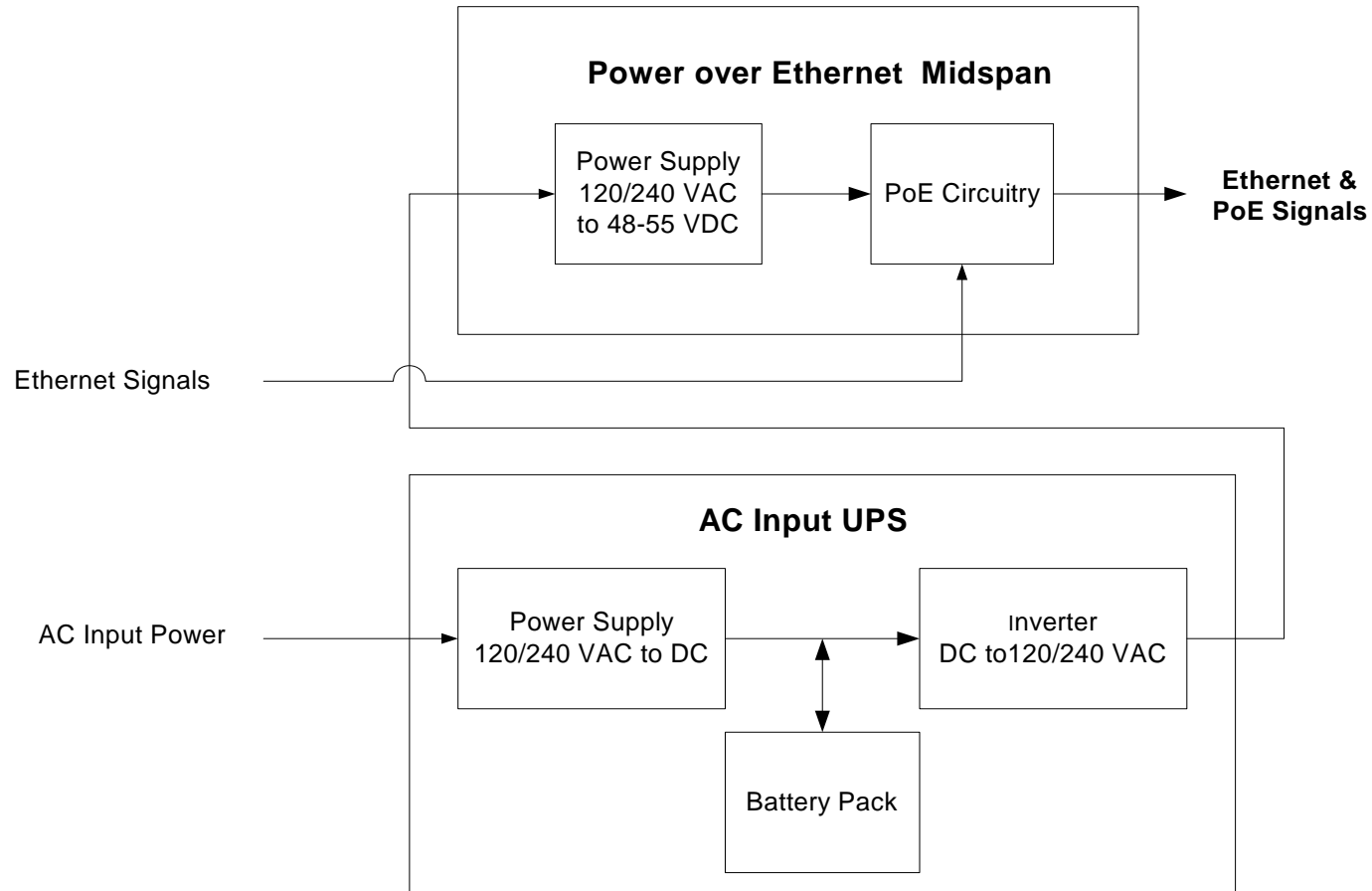
Why is an Integrated DC UPS Better

- Less Complex Circuitry
- More Efficient
- Smaller Footprint
- Lower Cost



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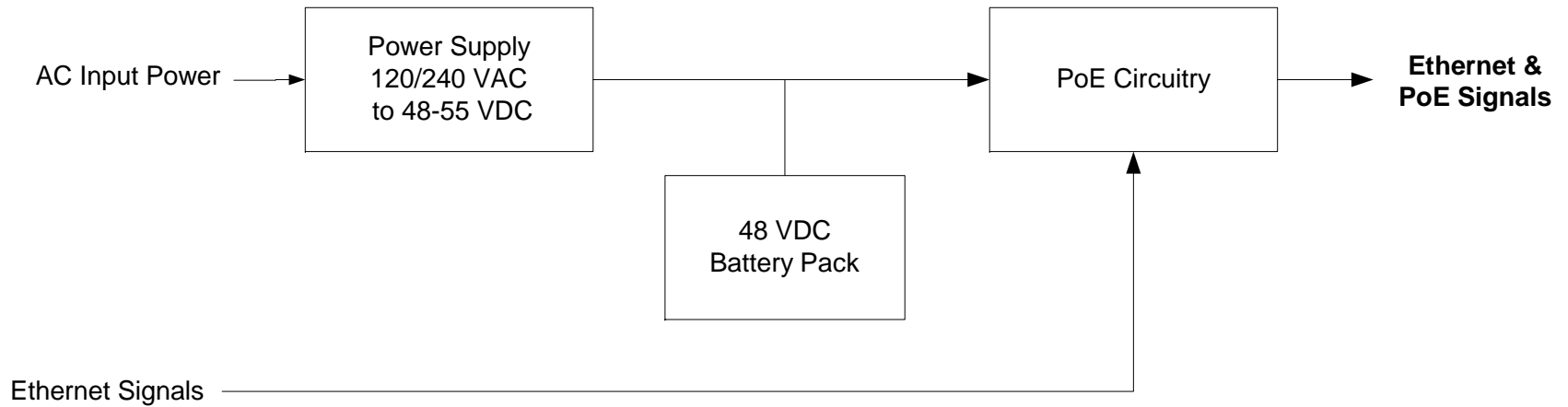
Standard Configuration of Midspan PoE Hub with AC Input UPS Backup



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PoE Mid Span with Integral Battery Backup



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Summary

Maintain current 802.3af voltage output range of 44 to 57 volts.

This allows simple low cost integrated UPS function in PSE.

Integrated UPS function is less complex, more efficient, and less costly than external AC input UPS.

