



2 Pair or 4 Pair Power Transmission?

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PoE-P PSE Comparisons

assume:

- 1.) that the PoE-P PD can be either 2P or 4P based on power needs
- 2.) a 2 pair PoE-P PSE can supply up to 30W and a 4 pair PoE-P PSE can supply up to 45W
- 3.) a 4 pair PoE-P PSE can supply 2 pair and 4 pair power needs

Parameter	2 Pair	4 Pair	Comments
Structured Cabling Perspective			
Lower Cable Temperature		Advantage	less current in each wire
Lower Connector Temperature		Advantage	less current in each wire
more balance tolerance		Advantage	less current in each wire
higher power transmission efficiency		Advantage	less power dissipated in cable
Component Vendor Perspective			
Lower Transformer Temperature		Advantage	less current in each wire
More margin before Trasformer Sauturation		Advantage	less current in each wire
Lowest IC cost	Advantage		
System Vendor Perspective			
more Power transmission capability		Advantage	less current in each wire
Pair-Pair Balance circuitry	Advantage		if any is need at all
within pair balance circuitry		Advantage	less current in each pair may not require any within pair balancing
User Perspective			
less initial confusion (plug and play)		Advantage	4 pair PD not compatible to a 2 pair PSE
no upgrade issues		Advantage	4 pair PD not compatible to a 2 pair PSE
less cost	Advantage		Minor cost difference between 2P and 4P



System Manufacturers will generally not develop 2 products that do essentially the same thing, unless there is a compelling reason to do so.

What are the costs associated with maintaining 2 products?

Costs associated with supporting a 2 pair PoE-P PSE products (one 2P and one 4P):

- 1.) Cost of carrying 2 inventories
- 2.) Cost of supporting two products in Manufacturing
- 3.) Cost of supporting two products from a customer support point of view
- 4.)
- 5.)

Costs savings associated with a 2 pair PoE PSE product:

- 1.) PoE PSE IC savings
- 2.) external component savings (center tap-less transformer, external transistors, miscellaneous passive components)