

# PD Power Interface Identification

## Part-2

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# Purpose

To determine when Type 1 and 2 PDs may be powered using both power Alternatives simultaneously.

# Part-1 Key Points

Type 1 and 2 PDs do not have a required mechanism for identifying if they may be 4-pair powered.

A PSE may power both Alternatives simultaneously when the PD is capable of accepting power on both Alternatives simultaneously.

# PD-4P Power Ability Report

1. The PD needs to identify itself as 4P power capable (**4P-ID**).
2. PDs without a 4P-ID need to be 2P powered.

# 4P-ID Considerations

1. A mechanism that works for PDs in the field.
2. The mechanism should reduce false positives.
3. A mechanism that works on most pre-existing equipment and all defined equipment.

# 4P-ID Related Efforts

1. 2013-11 4P interoperability  
abramson\_01\_1113.pdf
  - i. Assumes a Type 1 and 2 architecture that supports 4P powering.
  - ii. Identifies one PD or dual PD architecture.

# 4P-ID Method

1. PD physical mechanisms?
  - i. **Detection** reports invalid and valid PD.
  - ii. **Classification** reports PD power need and Type.
- PD physical mechanisms are not likely to provide a 4P-ID for legacy PDs.
2. Data Link Layer, LLDP
  - i. A **TLV** extension may support legacy and new PD Types.

# 4P-ID TLV Implications

1. Existing PDs that support LLDP require a firmware update. New PDs are updated when they are manufactured.
2. New 4P PSEs will recognize the 4P-ID.
3. New 4P PD Types will have a physical means of identifying themselves. This will likely be used as a proxy for the 4P-ID.



# PSE method to determine 4P-ID?

1. For every **legacy** PD that is 4P power capable,
  - i. A new 4P noncompliant version may be made using the compliant behavior as a starting point.
  - This prevents the PSE alone from determining whether a PD is 4-pair power capable.  
AKA the PD needs to provide a 4P-ID.

# Conclusion

The PD needs to identify itself as 4P power capable (**4P-ID**).

The PSE alone is not able to determine whether a PD is 4-pair power capable.

A LLDP TLV extension may be used to provide a 4P-ID PD.

New PD types are a proxy for the PD 4P-ID.

# Straw Poll

I support a LLDP extension that provides a 4-pair power identification (4P-ID).

Do you agree with the above statement for IEEE 802.3bt?

Y:

N:

A:

# Seen Simply

Turning complexity into understanding.