

HUAWEI ENTERPRISE **A BETTER WAY**

Consideration on Connection Check

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Motivation

- **Clarify what connection check can do in bt standard.**
- **Study how it works with different load.**

History

1. what can Connection Check do

- At November 2014 meeting, connection check is to determine if a PSE is attached to a single or dual interface PD.

(Lukacs_01_1114.pdf).

→ In the last meeting, we've started to provide solutions/methods to distinguish interfaces of PD.

- At September 2014 meeting, a connection check can be used to determine if the PD is a single or dual load architecture.

(Abramson_01_0914.pdf)

→ At the very beginning, connection check is also considered to determine the loads.

2. What is connection check for?

According to previous discussion on connection check (abramson_01_1113.pdf)

- If PSE determines that it is a single PD interface, the power requested by the PD during class is assumed to be the total power for all 4 pairs.
- If PSE determines that it is connected to 2 separate PD interfaces, the power requested by each PD during class applies only to each PDs pair set respectively.

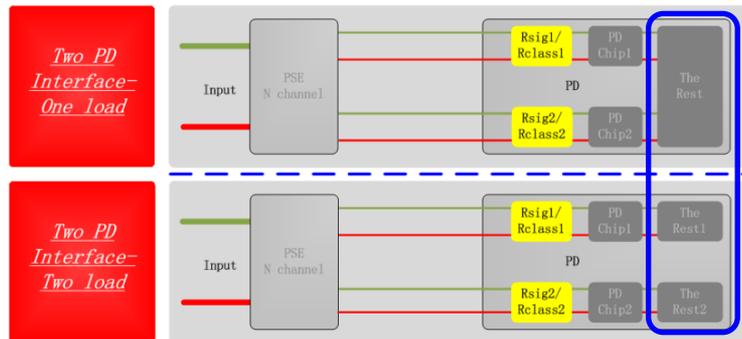
1. What can Connection Check do?

→ ***Can connection check distinguish different load?***

2. What is connection check for?

→ ***According to results of connection check, PSE determines the power requested by a PD based on classification.***

Assumption I: CC can distinguish one load and dual load



The Dual interface PD with single/dual load is to be discussed here.

Assume connection check is able to distinguish one load and dual load.

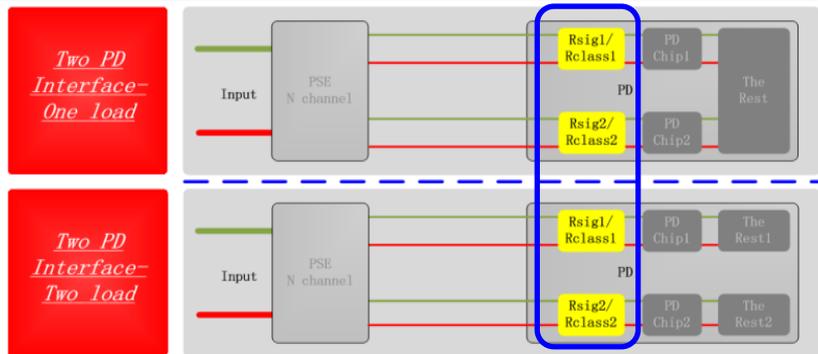
Take class 0 ~ 4 for example, the following table shows the requested power of a dual interface PD based on classification on each pair-set.

| No | Pair-set1 | Pair-set2 | Class on pair-set | Load | Power on each pair-set | Notes |
|----|-----------|-----------|--|--------|---------------------------------|---|
| 1 | Class 0~4 | Class 0~4 | Class _{pair-set1} = Class _{pair-set2} | Single | ½ (Total power) | Single load draws power evenly from both pair-sets |
| | | | | Dual | per pair set class respectively | |
| 2 | Class 0~4 | Class 0~4 | Class _{pair-set1} ≠ Class _{pair-set2} | Single | NA | Overloaded on one pair-set to reach the ½ (total power) |
| | | | | Dual | per pair set class respectively | |

Dual interface PD with single load MUST provide the same class on each pair-set, since one pair-set may be overloaded to reach the half total power.

If CC can distinguish load, a dual interface PD with single load MUST have the same class on each pair-set.

Assumption II: CC cannot distinguish one load and dual load



Assume connection check cannot distinguish one load and dual load, the requested power of a dual interface PD should work well regardless of loads.

Take class 0 ~ 4 for example, the following table shows the requested power of a dual interface PD based on classification on each pair-set.

| No | Pair-set1 | Pair-set 2 | Class on pair-set | Power on each pair-set | Notes |
|----|-----------|------------|--|-----------------------------|---|
| 1 | Class 0~4 | Class 0~4 | $Class_{\text{pair-set1}} = Class_{\text{pair-set2}}$ | $\frac{1}{2}$ (Total power) | Single load draws power evenly from both pair-sets |
| 2 | Class 0~4 | Class 0~4 | $Class_{\text{pair-set1}} \neq Class_{\text{pair-set2}}$ | NA | Overloaded on one pair-set to reach the $\frac{1}{2}$ (total power) |

• In order **not to cause overloaded on one pair-set to reach the half total power**, the dual interface PD **MUST have the same class** on each pair-set.

If CC cannot distinguish load, the dual interface MUST have the same class on each pair-set.

Summary

- If connection check can distinguish load:
 - Dual interface PD with single load **MUST** have the same class on each pair-set.
- If connection check cannot distinguish load:
 - Dual interface PD **MUST** have the same class on each pair-set.

Can Connection Check distinguish load of a dual interface PD?

Thank you!