

# Ethernet-APL Test Guide

**Test Type (Data or Power):** Power

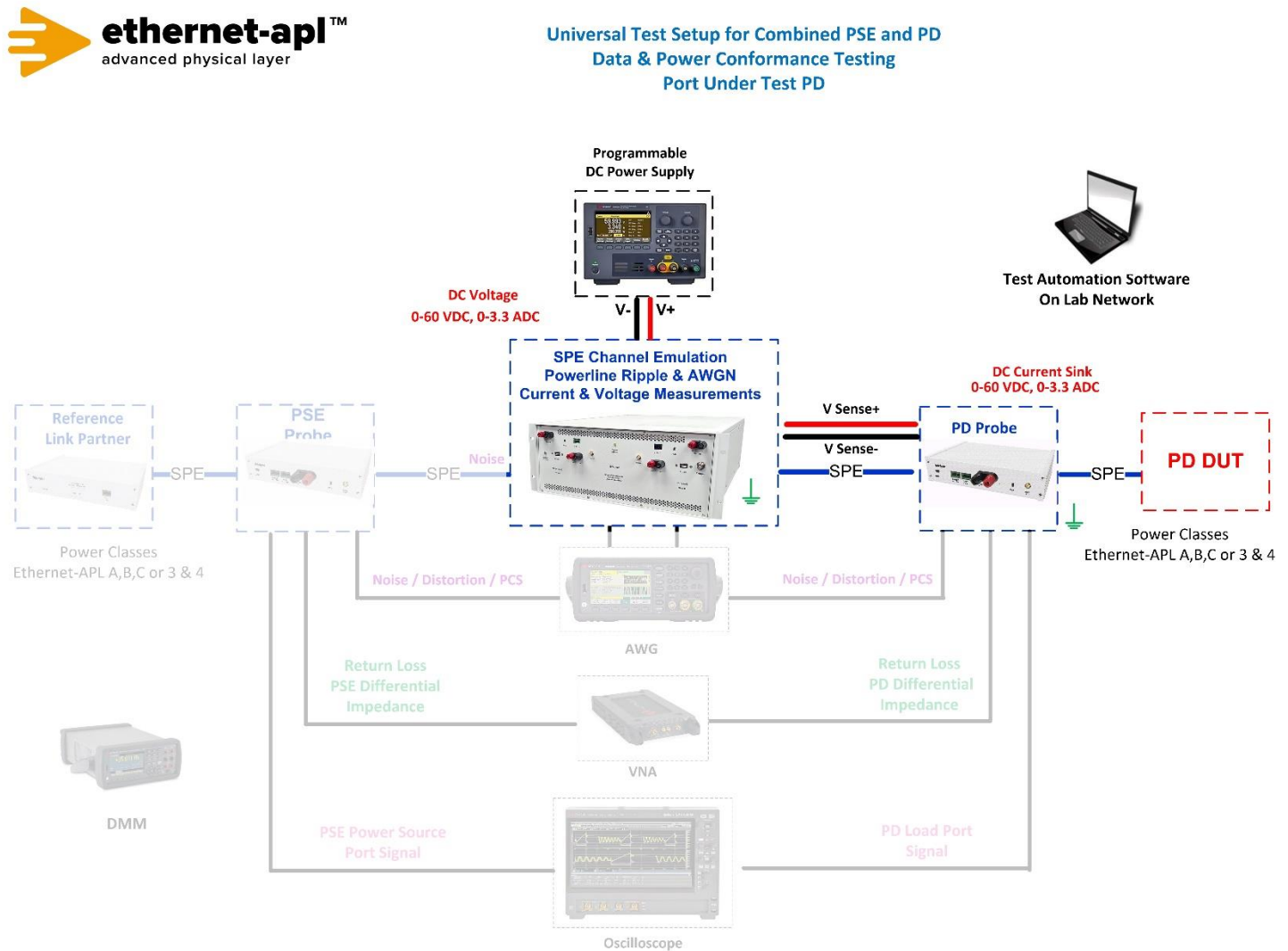
**Test Name:** TL.1.2 Inrush Current

**Purpose/Description:** To verify that a Trunk Power Load is within the bounds of inrush energy limits.

## Required Test Equipment:

1. PD Probe
2. 4950 Channel Emulator (for current and voltage measurements)
3. Programmable DC Power Supply (to power the PD Load DUT)
4. Test Automation Software

## Test Setup / Connection Diagram:



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## Device Under Test Setup:

- It is expected that all tests are performed with PHY communication abilities disabled. This is achieved by disabling Auto-Negotiation and setting the PHY to SLAVE mode. Regardless of the PHY state, each data line of the port under test shall be terminated with a 50 Ohm resistance behind a 1  $\mu$ F series capacitor in the Telebyte Probe.
- Enter the Power Class for the Device Under Test (Class 3 or 4) into the test automation software.

## Expected Results (Pass/Fail Criteria):

Step	Status	Description
5, 6	PASS	a. The value of $t_{inrush\_end}$ is less than or equal to 500 $\mu$ s; <b>and</b> b. $E_{in}$ does not exceed 5000 $\mu$ J ; <b>or</b> a. The inrush current does not exceed $I_{PS(MIN)}$ (Class 3 = 1.250 A and Class 4 =2000mA)
5	FAIL	The value of $t_{inrush\_end}$ is greater than 3ms
6	FAIL	$E_{in}$ exceeds 5000 $\mu$ J

## Notes:

## References:

[1] APL Port Profile Draft 1.2 Section 5.4