

Ethernet-APL Test Guide

Test Type (Data or Power): Power

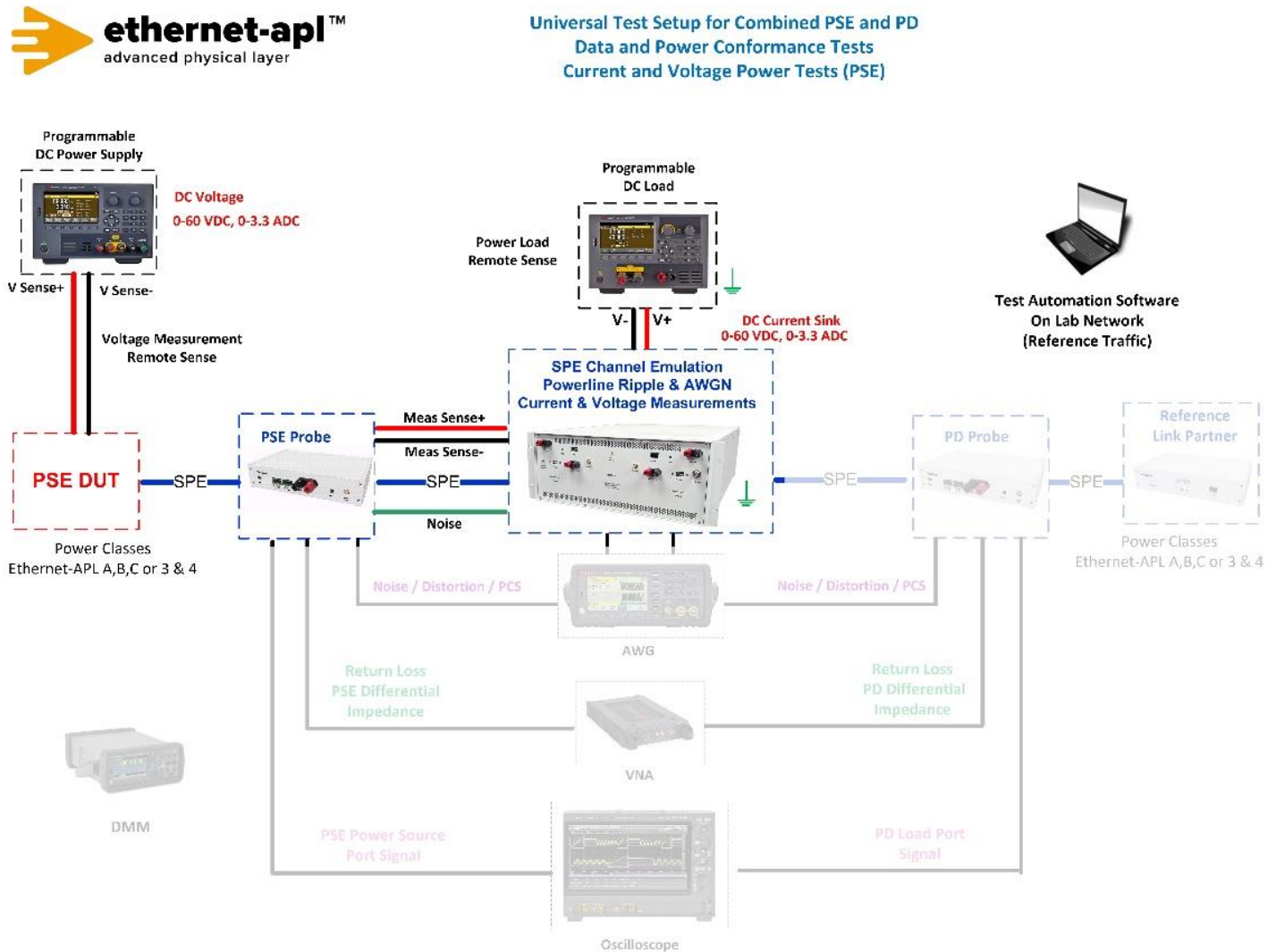
Test Name: SP.3.3 Short Circuit Behavior

Purpose/Description: To verify that a Spur Power Source port exhibits the correct behavior in a short circuit condition.

Required Test Equipment:

1. PSE Probe
2. DC Power Supply (To power the PSE Field Switch DUT)
3. Programmable DC Load
4. 4950 Channel Emulator
5. 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 μ F series capacitor in the Telebyte Probe.
- Enter the Power Class for the Device Under Test (Class A, B or C) into the test automation software.

Expected Results (Pass/Fail Criteria):

Step	Status	Description
5, 7	PASS	a. If the port is rated for intrinsically safe use, it never sources more than 380 mA; and b. The port automatically resumes normal operation in step 7 (port powers and sources 50 mA)
5, 7	FAIL	The port is rated for intrinsically safe use and sources more than 380 mA at any time during the test
7	FAIL	The port does not resume normal operation (remains disabled)

Notes:

[1] APL Port Profile 1.2 Section 6.5

[2] IEC TS 60079-47 – Equipment Protection by 2-Wire Intrinsically Safe Ethernet Concept

[3] Methods Annex – Short Circuit Condition

[4] Methods Annex – Sampling with digital Multimeter

[5] Methods Annex – Disabling PHY

[6] Ethernet-APL Power Test Specification v1.3