

# Ethernet-APL Test Guide

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

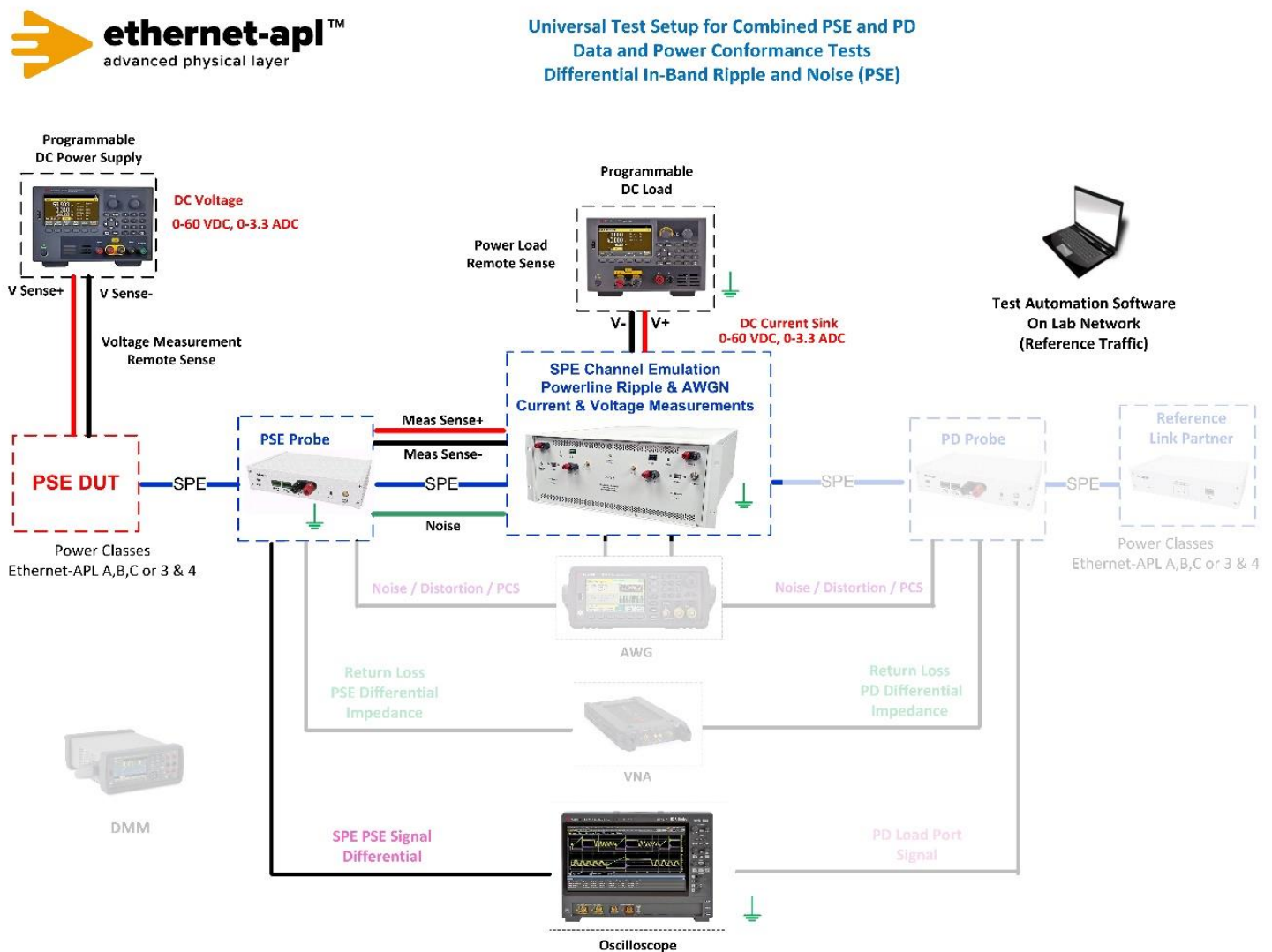
**Test Name:** TP.2.1 Differential In-Band Ripple and Noise

**Purpose/Description:** To verify that a Spur Power Source port introduces a level of ripple and noise below the required level in the normal operating band. Maximum and Minimum Voltages.

## 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. Oscilloscope
6. 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
7	PASS	All filtered measurements of $U_{\text{Noise}}$ are less than or equal to 10 mV <sub>PP</sub>
7	FAIL	At least one filtered measurement of $U_{\text{Noise}}$ is greater than 10 mV <sub>PP</sub>
8	PASS	All filtered measurements of $U_{\text{Noise}}$ are less than or equal to 10 mV <sub>PP</sub>
8	FAIL	At least one filtered measurement of $U_{\text{Noise}}$ is greater than 10 mV <sub>PP</sub>
9	PASS	All filtered measurements of $U_{\text{Noise}}$ are less than or equal to 10 mV <sub>PP</sub>
9	FAIL	At least one filtered measurement of $U_{\text{Noise}}$ is greater than 10 mV <sub>PP</sub>

## Notes:

[1] APL Port Profile 1.1 Section 5.4

[2] Methods Annex – Bandpass Filter

[3] Methods Annex – Disabling PHY