

# Ethernet-APL Test Guide

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

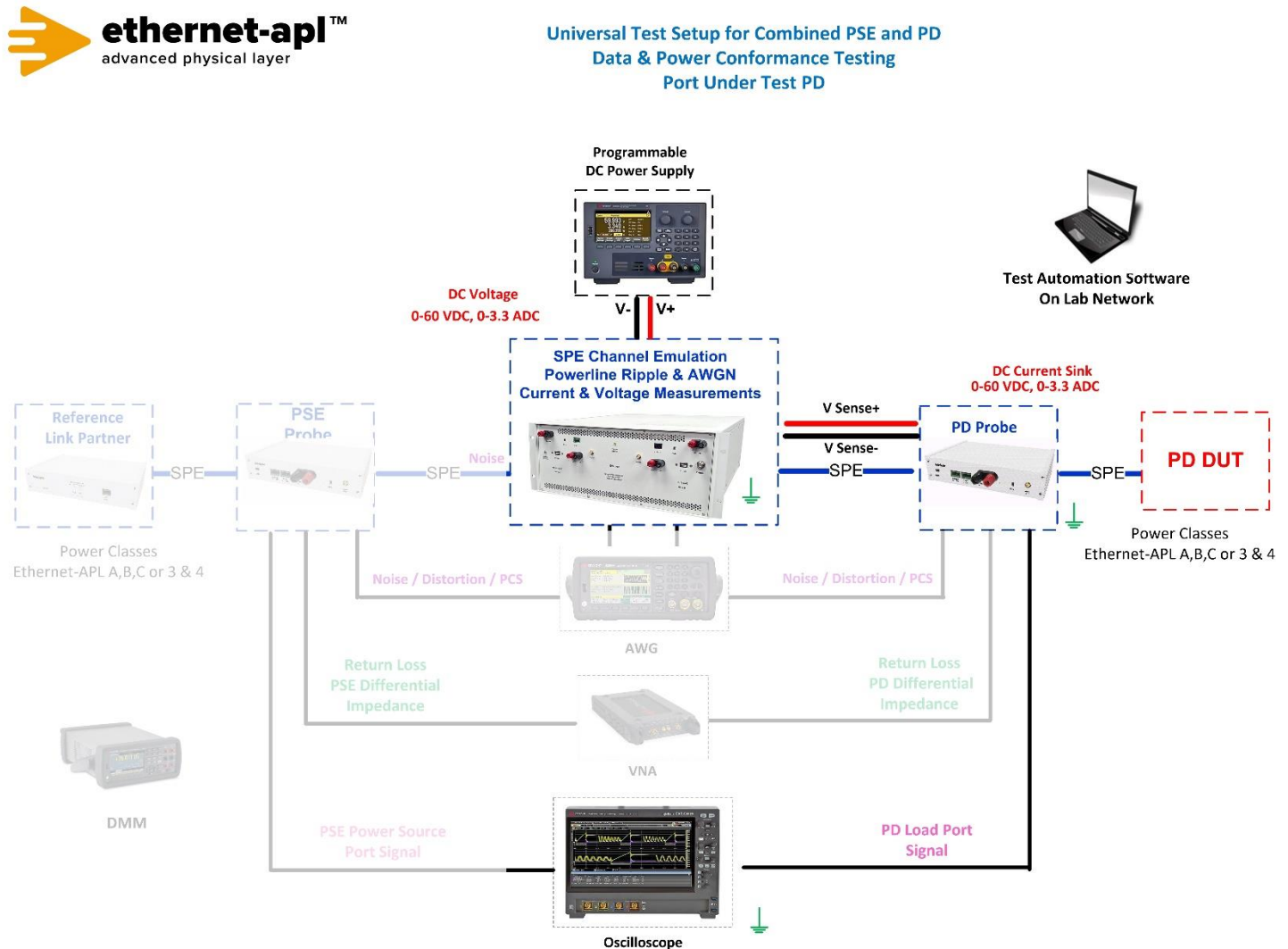
**Test Name:** SL.2.1 Differential In-Band Ripple and Noise

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

## 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. Oscilloscope
5. Test Automation Software

## Test Setup / Connection Diagram:



# Ethernet-APL Test Guide

## 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 A, B or C) into the test automation software.

## Expected Results (Pass/Fail Criteria):

Step	Status	Description
6	PASS	All filtered measurements of $U_{\text{Noise}}$ are less than or equal to 10 mV <sub>pp</sub> with a maximum supply voltage
6	FAIL	At least one filtered measurement of $U_{\text{Noise}}$ is greater than 10 mV <sub>pp</sub> with a maximum supply voltage
7	PASS	All filtered measurements of $U_{\text{Noise}}$ are less than or equal to 10 mV <sub>pp</sub> with a minimum supply voltage
7	FAIL	At least one filtered measurement of $U_{\text{Noise}}$ is greater than 10 mV <sub>pp</sub> with a minimum supply voltage

## Notes:

### References:

- [1] APL Port Profile 1.2 Section 5.4
- [2] Methods Annex – Bandpass Filter
- [3] Methods Annex – Disabling PHY
- [4] Methods Annex – Power Supply Voltage Sensing