

Ethernet-APL Test Guide

Test Type (Data or Power): Data

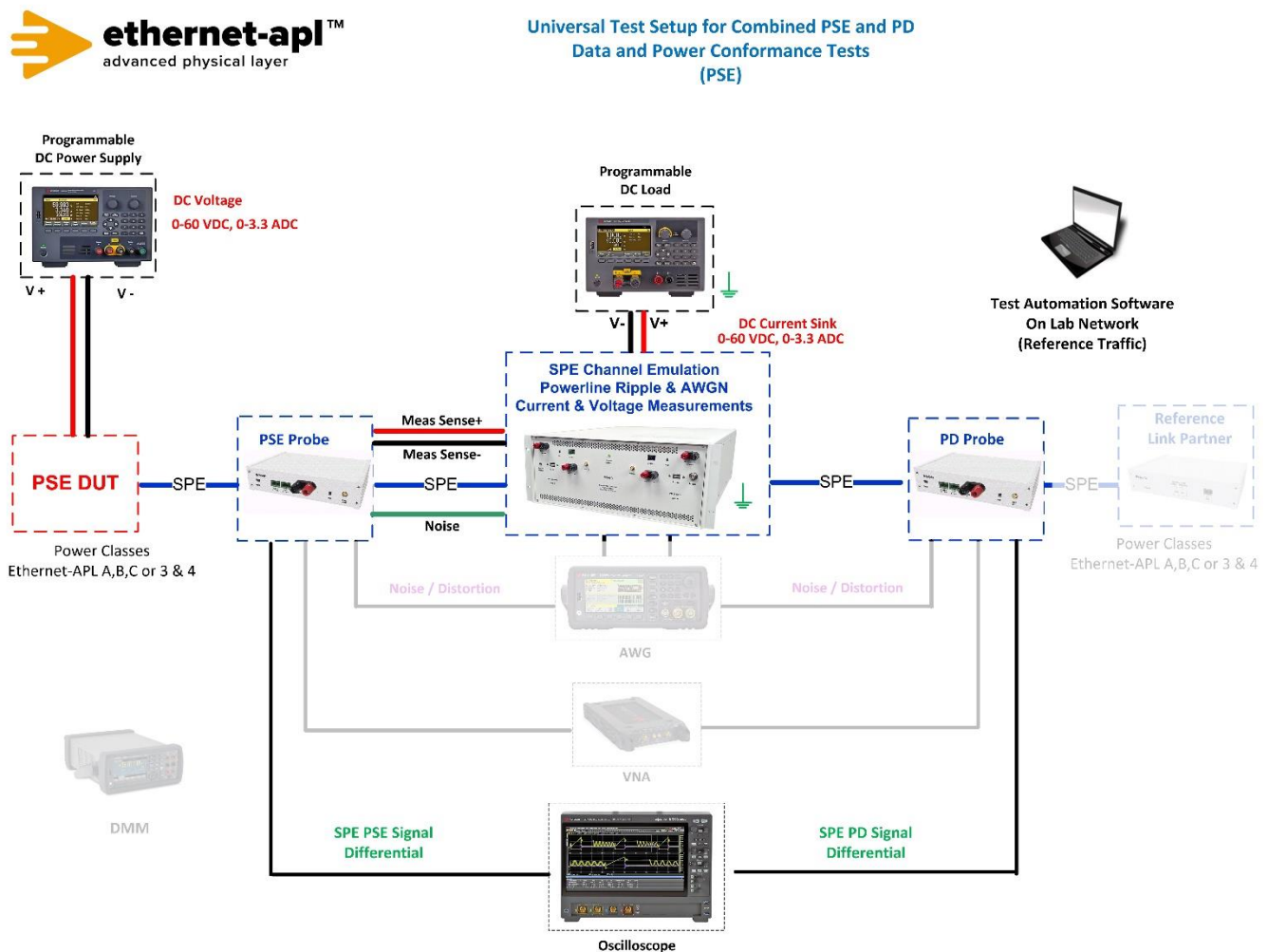
Test Name: 146.1.5 Transmit Clock Frequency

Purpose/Description: To verify that the frequency of the Transmit Clock is within the conformance limits.

Required Test Equipment for PSE:

1. PD Probe
2. 4950 Channel Emulator (for current measurements)
3. PSE Probe
4. Programmable DC Power Supply (to power the PSE DUT)
5. Programmable DC Load (to draw current from PSE DUT)
6. Oscilloscope
7. Test Automation Software

Test Setup / Connection Diagram (PSE):



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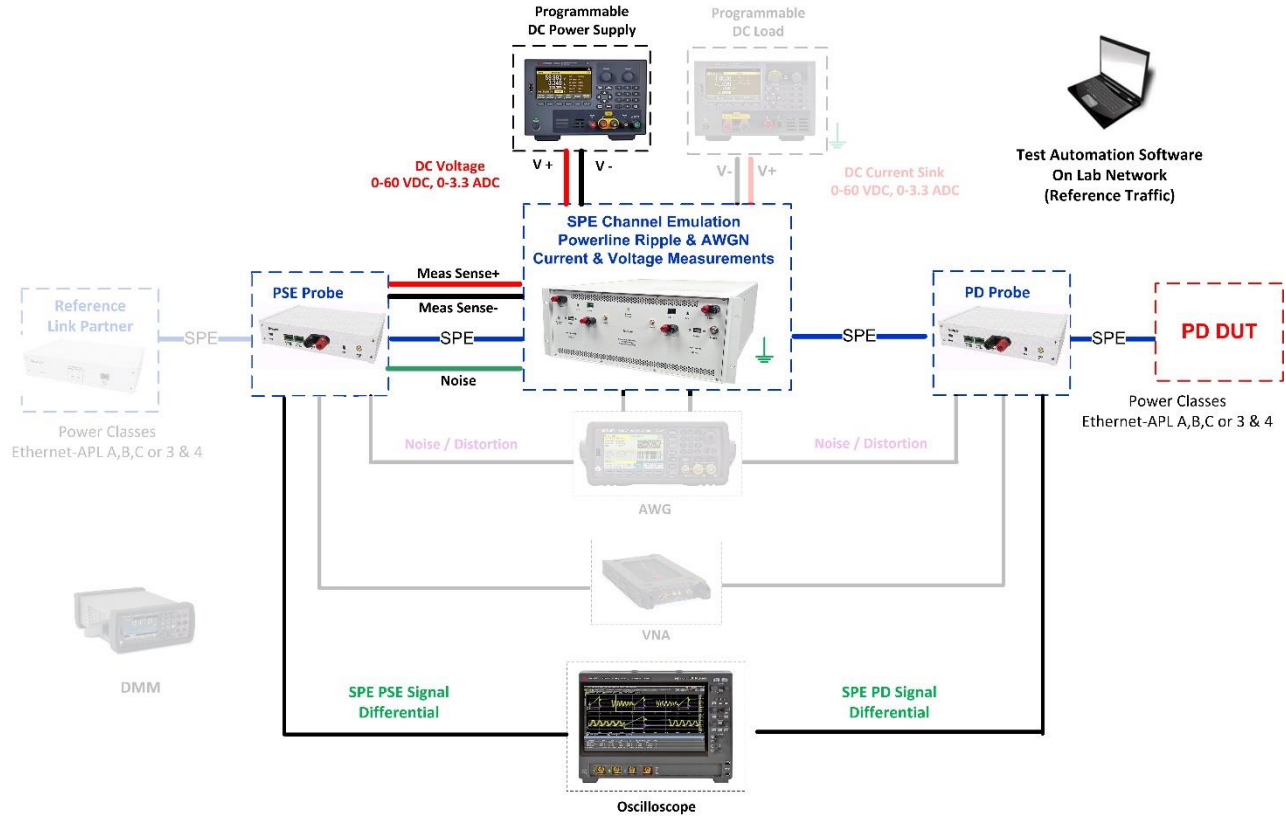
Required Test Equipment for PD:

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

Test Setup / Connection Diagram (PD):



Universal Test Setup for Combined PSE and PD Data and Power Conformance Tests (PD)



Device Under Test Setup:

- Enter the Power Class for the Device Under Test (Trunk: Class 3 or 4, Spur: Class A, B or C) into the test automation software.

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Expected Results (Pass/Fail Criteria):

Part A: Spur (1.0 Vpp operating mode) transmitter clock frequency

Step	Status	Description
A:7	Fail	The transmit clock generated by the DUT is not observed to have a frequency between 7.499625 MBd and 7.500375 MBd.
A:7	Pass	The transmit clock generated by the DUT is observed to have a frequency between 7.499625 MBd and 7.500375 MBd.

Part B: Trunk (2.4 Vpp operating mode) transmitter clock frequency

Step	Status	Description
B:6	Fail	In any observed capture, the transmit clock generated by the DUT is not observed to have a frequency between 7.499625 MBd and 7.500375 MBd.
B:6	Pass	The transmit clock generated by the DUT is observed to have a frequency between 7.499625 MBd and 7.500375 MBd.

Notes:

References:

- [1] IEEE Std. 802.3-2022, subclause 146.5.4.5 – Transmit Clock Frequency.
- [2] Test plan Appendix E – 10BASE-T1L Test Fixtures