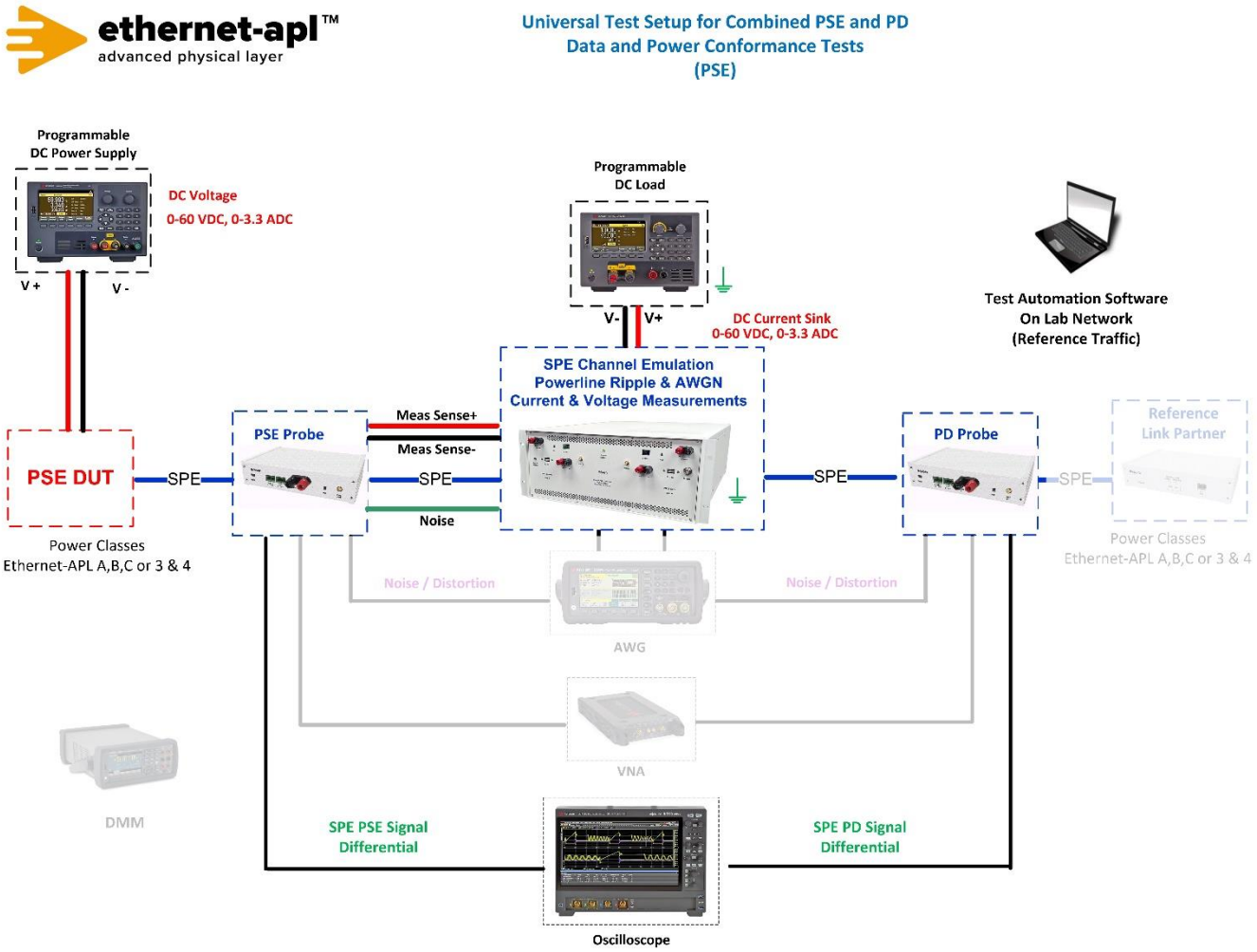
Test Type (Data or Power): Data
Test Name: 146.1.3 Transmitter Timing Jitter

Purpose/Description: To verify that the transmitter timing jitter of the PMA 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

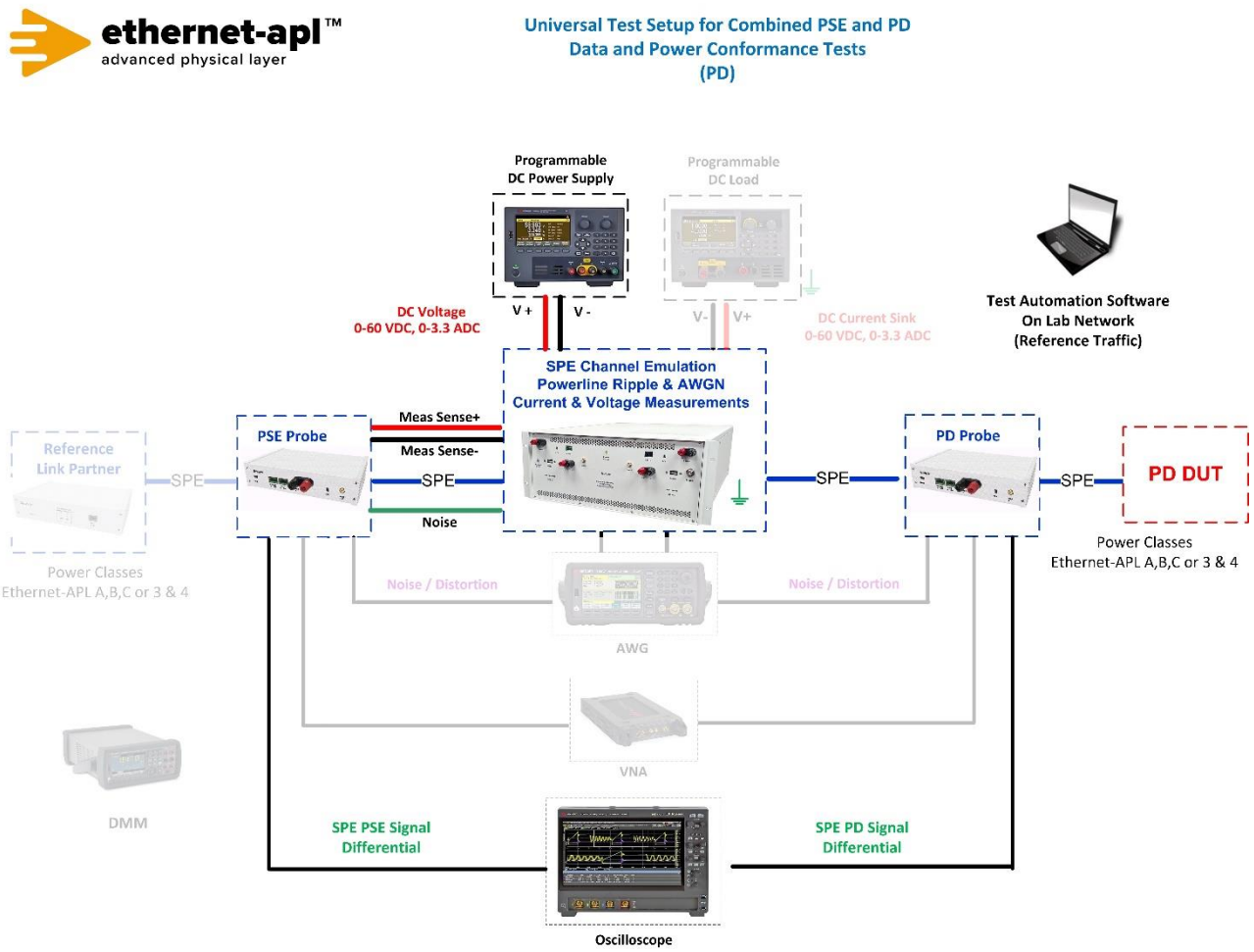
Test Setup / Connection Diagram (PSE):



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):



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.

Expected Results (Pass/Fail Criteria):

Part A: Spur (1.0 Vpp operating mode) transmitter timing jitter

Step	Status	Description
A:7	Fail	The maximum jitter at the transmitter side is more than 10 ns symbol-to-symbol jitter for any of the ten 10 ms captures.
A:7	Pass	The maximum jitter at the transmitter side is observed to be less than 10 ns symbol-to-symbol jitter for all of the ten 1 ms captures.

Part B: Trunk (2.4 Vpp operating mode) transmitter timing jitter

Step	Status	Description
B:7	Fail	The maximum jitter at the transmitter side is more than 10 ns symbol-to-symbol jitter for any of the ten 10 ms captures.
B:7	Pass	The maximum jitter at the transmitter side is observed to be less than 10 ns symbol-to-symbol jitter for all of the ten 1 ms captures.

Notes:

References:

[1] IEEE Std. 802.3-2022, subclause 146.5.2 – Test modes
[2] Ibid., subclause 146.5.3 – Test Fixtures
[3] Ibid., section 146.5.4.3 – Transmitter Timing Jitter
[4] Test plan Appendix E – 10BASE-T1L Test Fixtures