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Test Procedure for Common Path Distortion (CPD)

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140 Philips Road
Exton, PA 19341

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1.0 Scope

- 1.1 The purpose of this document is to establish the standard methodology used to measure Common Path Distortion (CPD) in Cable Telecommunications Systems.
- 1.2 Please note that this procedure is a very unique procedure for measuring Common Path Distortion and distinguishes itself from other similar procedures in the following ways:
 - Single port measurement, measures reflected energy
 - Inject two forward carriers separated by 6 MHz and measure return beat at 6 MHz
 - Used to verify performance of single port passives such as terminators or passives with all other ports terminated. Designed to be consistent with the mechanisms that cause common path distortion in outside plant.

For similar procedures, please reference the following:

- ANSI/SCTE 115 2006 : Test Method for Reverse Path (Upstream) Intermodulation Using Two Carriers
- ANSI/SCTE 145 2008: Test Method for Second Harmonic Distortion of Passives Using a Single Carrier
- ANSI/SCTE 126 2006: Test Method for Distortion of 2-way Active Amplifier Caused by Insufficient Isolation of Built in Diplex Filter

Each of these procedures targets a different measurement for a unique purpose. They are independent, are specifically applicable to the device being measured, use the test equipment commonly available at the manufacturing sites used to make the device being tested, and directly measure the impairment that must be controlled. The key differences are whether they are designed for actives or passives and whether they are single port or two port measurements. Other differences are the types of distortion products being measured and the filters required to do so.