

Proposer's note: If the use of test fiber as a chromatic dispersion element and the corresponding bandwidth adjustment of the reference receiver / filter combinations are adopted normatively in clause 86.7.5.4 for the TDP test fixture, then the proposed content of the new informative annex for extended-reach testing follows.

Annex 86A

(informative)

Transmitter and dispersion penalty (TDP) test for extended-reach capability

86A.1 Introduction

40GBASE-SR4 and 100GBASE-SR10 transmitters may be capable of supporting transmission to lengths longer than those established in clause 86. This annex describes an adjustment to the TDP test fixture for screening transmitters that have extended-reach capability. If transmitters compliant to clause 86 requirements pass the TDP test under the more stressful conditions imposed by this longer-length channel adjustment, then these transmitters can support transmission over such channels, provided the maximum channel insertion loss of 86.10.1 is not exceeded.

86A.2 TDP test fixture adjustment

The adjustment inserts a higher level of impairment into the test channel in the form of an additional length of the test fiber defined in 86.7.5.4 that acts as a chromatic dispersion element within the TDP test fixture. The 6.63 GHz bandwidth of the reference receiver / filter combination defined in clause 86.7.5.4 corresponds to 100 m of OM3 cabled optical fiber. This bandwidth also corresponds to 200 m of OM4¹ cabled optical fiber when operating at a worst-case wavelength of 840 nm. Therefore doubling the length of the test fiber in the TDP test fixture introduces the appropriate adjustment that permits the fixture to screen transmitters capable of supporting transmission over at least 200 m of OM4 cabled optical fiber. Doubling the length of the test fiber results in a maximum dispersion value of -21.6 ps/nm at 840 nm. No other fixture adjustment is needed.

86A.3 Other parametric adjustments

No parametric adjustments are required to the PMD specifications. Of specific relevance, the maximum TDP value and the minimum OMA value of Table 86-8 remain unchanged. The fiber optic cabling (channel) characteristics defined in Table 86-18 remain unchanged except the maximum operating distance is increased to 200 m. The optical fiber and cable characteristics defined in Table 86-19 remain unchanged except the minimum effective modal bandwidth is raised to 4700 MHz•km corresponding to OM4 cabled optical fiber.

¹ Specified in draft TIA 492-AAAD as fiber for use in OM4 cabled optical fiber, and in draft IEC 60793-2-10 edition 4 as Type A1a.3