Insertion Loss Measurement Procedure

MPO Connector, One Cord OS1 SMF

TIA 568-C.0

The basic principles are presented.

- Testing is performed one fibre at a time using a Kingfisher International optical power meter with Large Area Detector and two launch cords.
- The use of verified reference grade test cords is mandatory.
- For clarity, mode filters and the necessary presence of pinned and non-pinned connectors are not shown.
- To achieve consistent results, clean all connectors, through-connects and adapters associated with the test prior to and during measurement.
- Ensure the source has warmed up before commencing measurement.

1. Connect 'the breakout launch cord to the single fibred' launch cord and power meter. Set the reference.

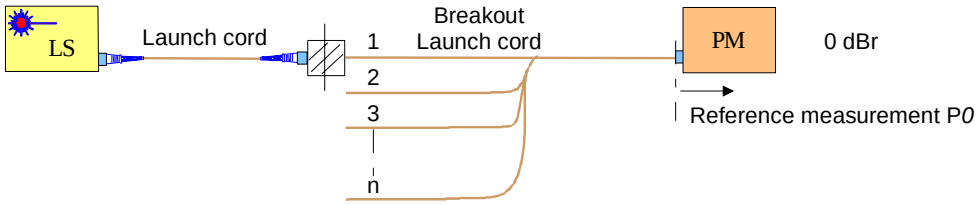

Figure 1, One cord reference

2. Disconnect breakout launch cord from meter. Connect breakout launch cord to one end of the cabling under test (CUT/DUT). Connect MPO tail cord (TC) to other end of the DUT.

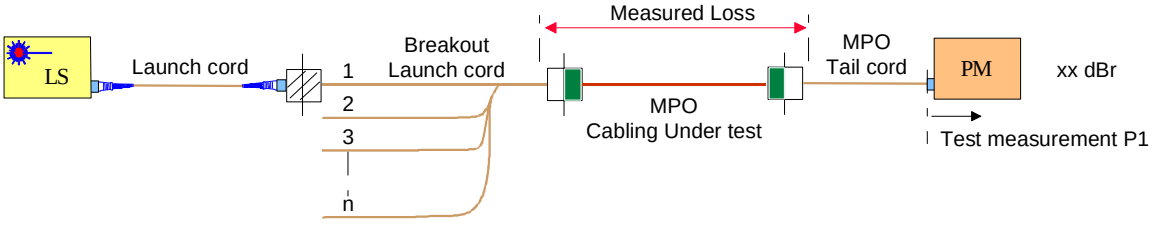

Figure 2, One cord measure, fibre 1

3. Read the insertion loss directly in dBr.

4. Maintaining cleanliness, move launch cord through fibres 2 to n and measure IL. Do not disconnect the MPO TC.

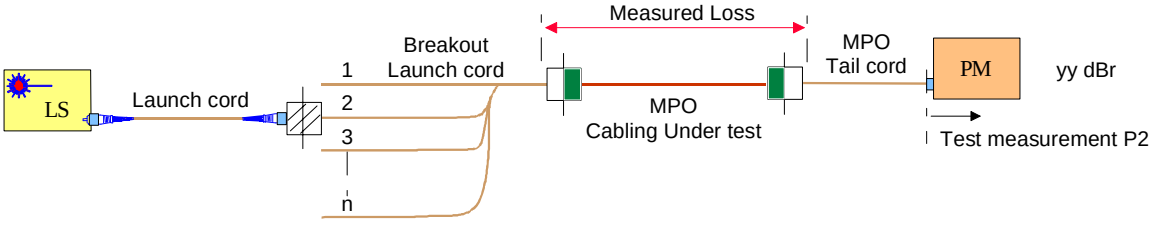

Figure 3, One cord measure, fibres 2 ~ n

Air coil specifications

SMF air coil specifications.

Air coils should be placed towards the source end of the launch cord.

Minimum of 1 single air-coiled turn or mandrel wrap of 30 mm / 1.2 inch diameter.

Table 1, Air Coil specification

TIA Cabling Specifications 568.C.3

For installations tested in accordance with TIA specifications, the following maximum limits apply to the various cable plant components.

Item	Specification
Connector loss	0.75 dB
Splice loss	0.3 dB
1310 nm	1.0 dB/km
1550 nm	1.0 dB/km

Table 2, TIA 568.C.3 cable plant specification

Pass / Fail formula

The American TIA pass-fail standard uses a standard Telco type formula.

One cord referencing is specified.

SMF

Maximum IL at 1310 / 1550 nm = 1.0L + 0.3N + 0.75C

Where:-

L = Cable length in Km,

N = number of splices and

C = number of connectors.