Insertion Loss Measurement Procedure

One Cord Reference / Configuration A. MMF

TIA 526-14-C

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 measurements.

1. When necessary, fit correctly sized mandrel to source end of launch cord. e.g. Kingfisher OPT701 mandrels.

Fibre cladding	3 mm jacketed mm /(inch
Fibre core	
50 µm	22 (0.87)
62.5 µm	17 (0.67)

Table 1, Mandrel diameters for 3 mm launch cord:
Foreward Page iv

1. Connect launch cord to meter and set the reference.
For clarity mandrels are not shown.

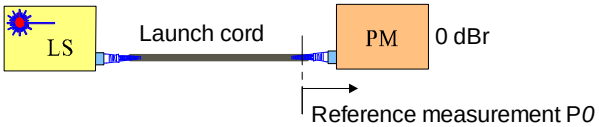
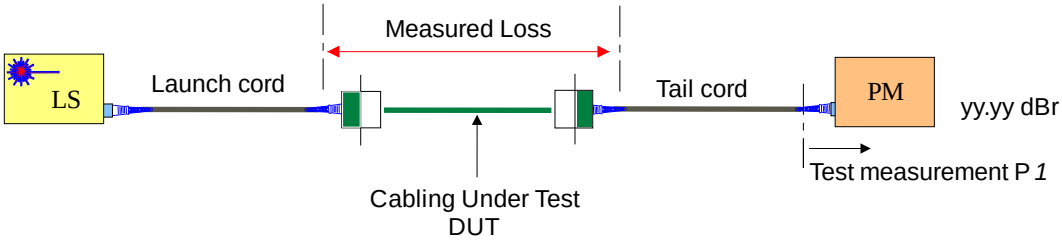


Figure 1, One cord reference

2. Disconnect launch cord from meter and connect to one end of the cling under test (CUT / DUT).

   Using a second test cord, connect the meter to the other end of the DUT.



Fi

gure 2, One cord measure

3. Read the insertion loss directly in dBr.

4. Standard based pass/ fail calculations as shown over the page can be applied to the result. Testing may be required in one or both directions.

TIA Cabling Specifications 526-14-C

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

Item	Specification
Connector loss Ref-Std	0.3 dB
Connector loss Std-Std	0.5 dB
Splice loss	0.3 dB Note 1
850 nm 50 µm	3.0 dB/km Note 1
1300 nm 50 µm	1.5 dB/km Note 1

Table 2, TIA 526-14-C cable plant specification:
Annexes F & H

Pass / Fail formula

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

Where One cord referencing is specified.

Maximum IL = Length Loss + splice loss + 2 end connector losses + other connector losses

MMF ***Formulae require checking***

Reference (Ref) grade test cords

Maximum IL at 850 nm = 3.0L + 0.3N + 0.6 + 0.5(C-2)

Maximum IL at 1300 nm = 1.5L + 0.3N + 0.6 + 0.5(C-2)

Standard (Std) grade test cords

Maximum IL at 850 nm = 3.0L + 0.3N + 1 + 0.5(C-2)

Maximum IL at 1300 nm = 1.5L + 0.3N + 1 + 0.5(C-2)

Where:-

L = Cable length in Km,

N = number of splices and

C = number of connectors.

Note 1: Specifications for splice and cable loss not in the standard. Data taken from TIA-568.3-D.