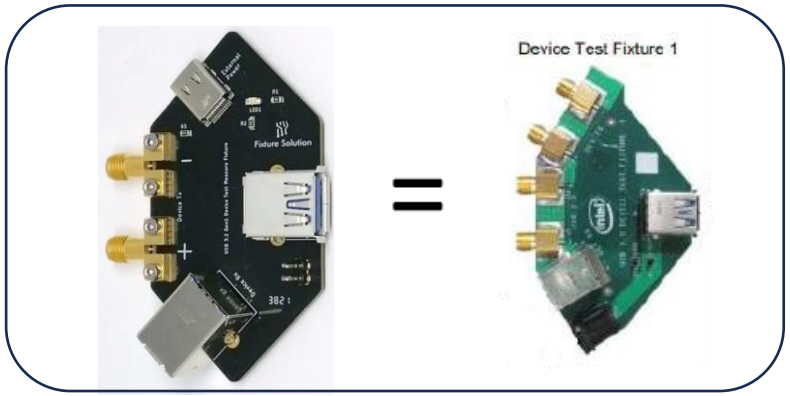
USB3.2 Gen1 Tx & Rx A-B Test Topologies

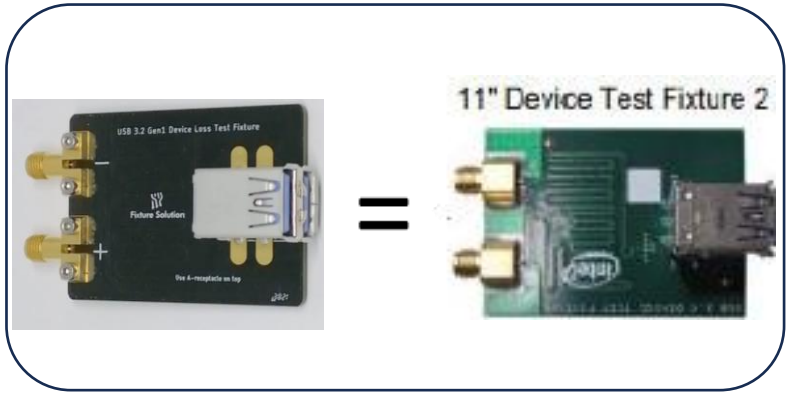
V09

Fixture Solution

USB3.2 Gen1 Device Upstream Tx

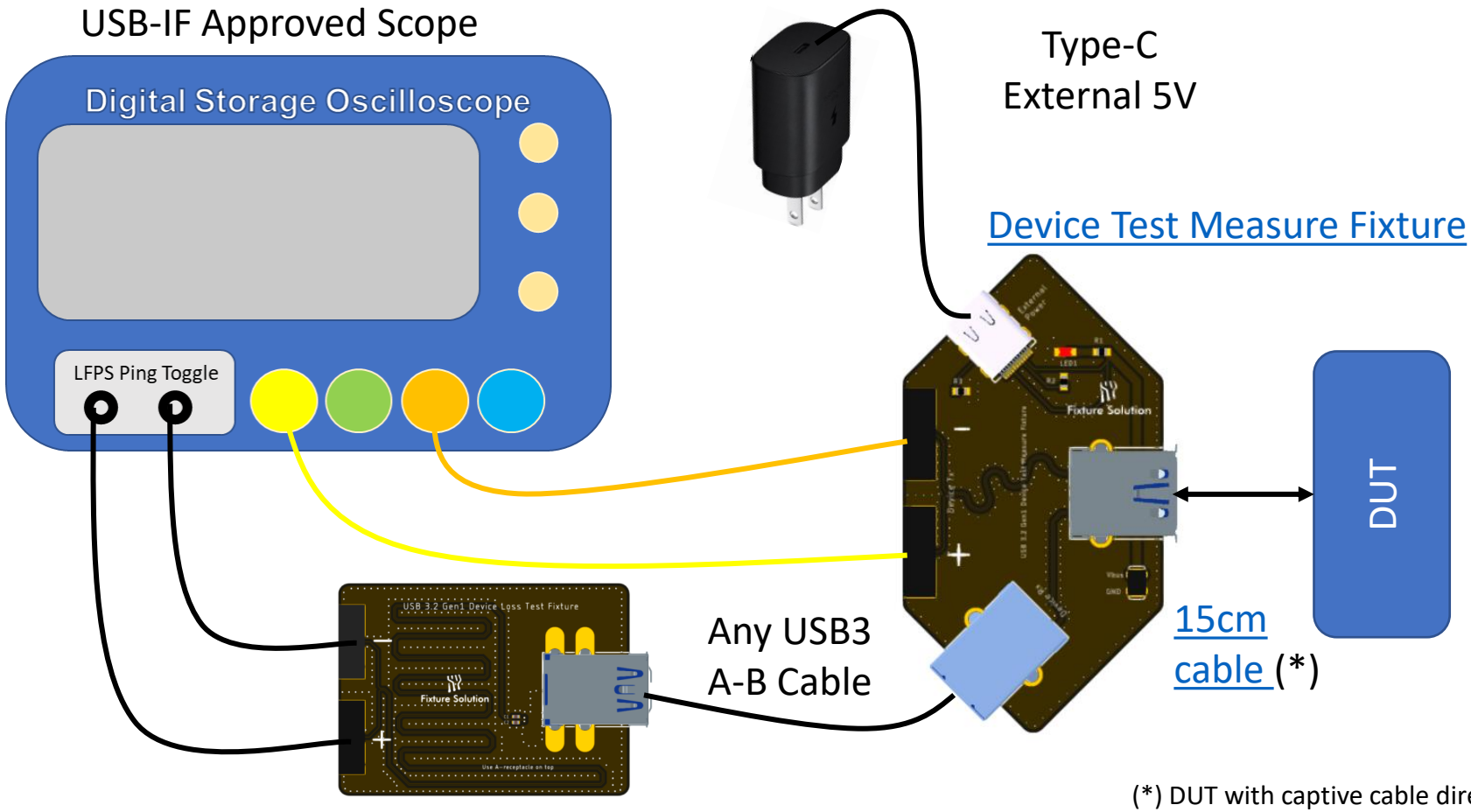
1) Setup Topology based on USB 3.0 Electrical Test Fixture Topology | USB-IF
2) Covers TD.1.1, TD.1.3 (short and long channel), TD.1.6 from Electrical Compliance Test Specification for SuperSpeed USB 10 Gbps Rev. 1.0 | USB-IF
3) Use USB3.2 Gen1 Device Measurement Fixture
4) Use short cable between Device Measurement fixture and DUT
    1) 15cm Standard-B
    2) 15cm Micro-B
5) For PING LFPS Toggle use USB3.2 Gen1 Device Loss Fixture (11” PCB trace)





Fixture Solution

USB3.2 Gen1 Device Upstream Tx Topology

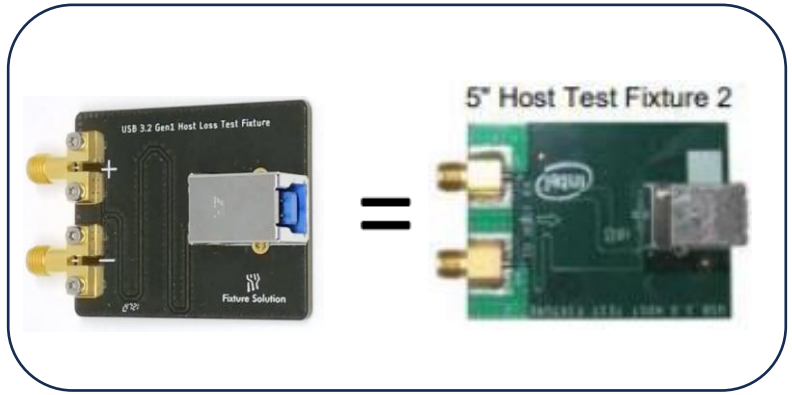


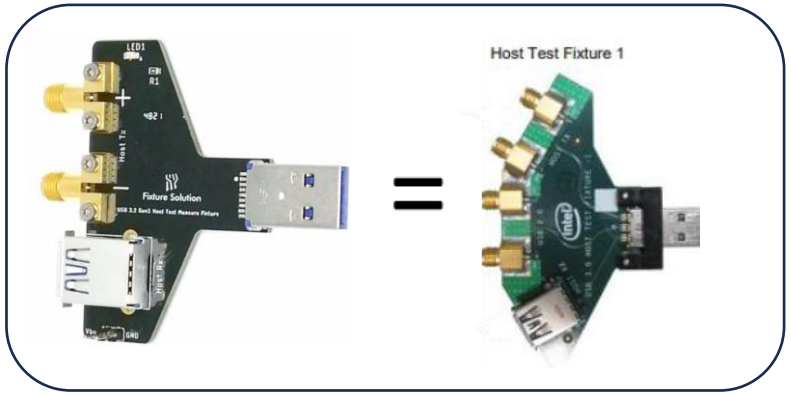
USB3.2 Gen1 Device Loss Fixture (11” PCB trace)

(*) DUT with captive cable directly connect to device measure fixture

USB3.2 Gen1 Host/Hub Downstream Tx

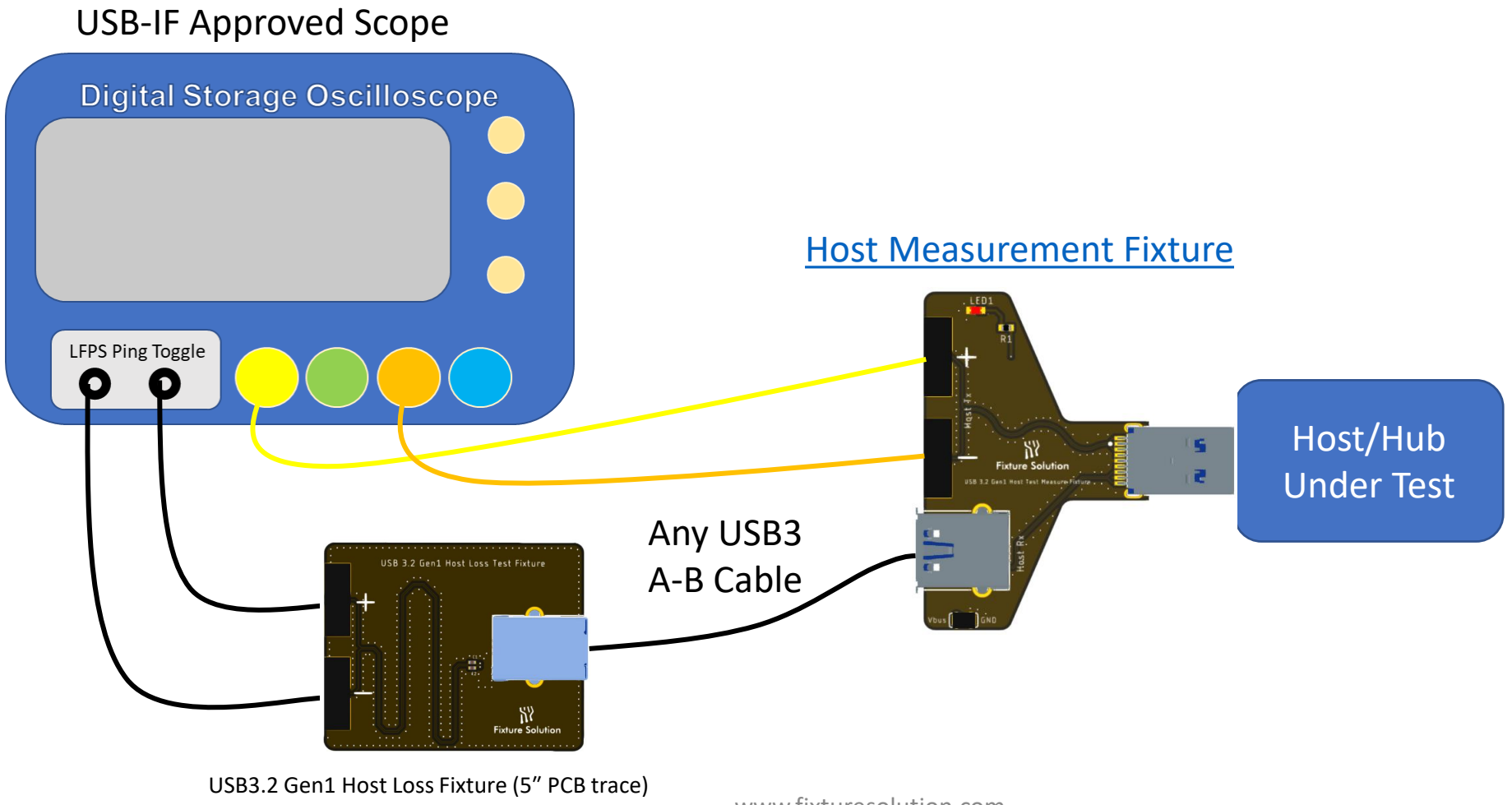
1) Setup Topology based on USB 3.0 Electrical Test Fixture Topology | USB-IF
2) Covers TD.1.1, TD.1.3 (short and long channel), TD.1.6 from Electrical Compliance Test Specification for SuperSpeed USB 10 Gbps Rev. 1.0 | USB-IF
3) Use USB3.2 Gen1 Host Measurement Fixture
4) For PING LFPS Toggle use USB3.2 Gen1 Host Loss Fixture (5” PCB trace)





Fixture Solution

USB3.2 Gen1 Host/Hub Downstream Tx Topology



USB3.2 Gen1 Host Loss Fixture (5” PCB trace)

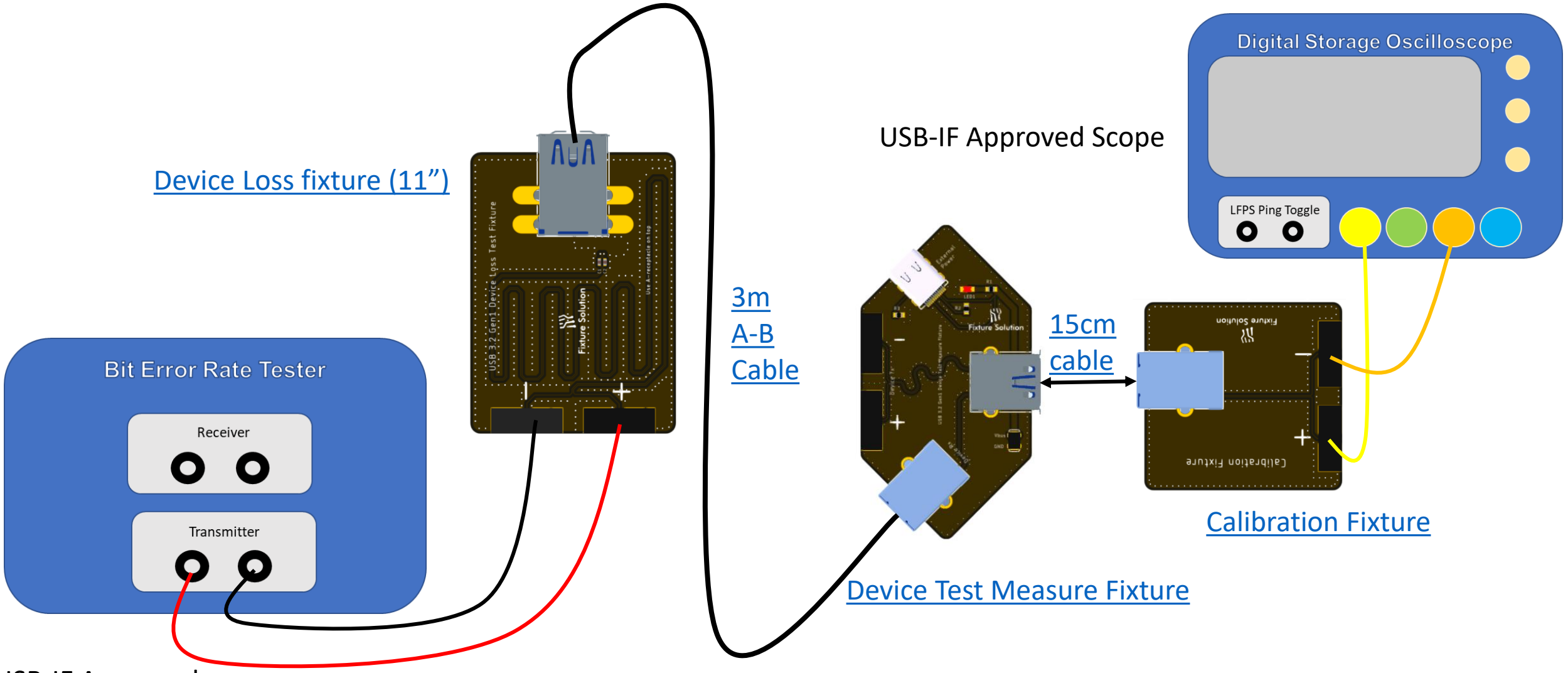
USB3.2 Gen1 Device Upstream Rx Test

1) Setup Topology based on USB 3.0 Electrical Test Fixture Topology | USB-IF
2) Covers TD.1.8 Electrical Compliance Test Specification for SuperSpeed USB 10 Gbps Rev. 1.0 | USB-IF
3) Use USB3.2 Gen1 Device Measurement Fixture (long channel)
4) Use USB3.2 Device Short Channel (short channel)
5) Use short cable between Device Measurement fixture and DUT
    1) 15cm Standard-B
    2) 15cm Micro-B
6) Use USB3.2 Gen1 Device Loss Fixture (11" PCB trace)
7) Use USB3.2 Gen1 Calibration Fixture
8) If DUT have Standard-B receptacle use 300cm USB 3.1 Gen1 Standard B-Plug – A-plug
9) If DUT have Micro-B receptacle use 100cm USB 3.1 Gen1 Standard B-Plug – A-plug
10) If DUT have captive cable use 15cm USB 3.1 Standard B-Plug – A-plug

Fixture Solution

USB3.2 Gen1 **Device** Rx Calibration

Fixture Solution



USB3.2 Gen1 **Device** Rx **Long** Channel Jitter Tolerance test

Fixture Solution

Type-C 5V External Power

USB-IF Approved Generator & BERT

Bit Error Rate Tester

Receiver

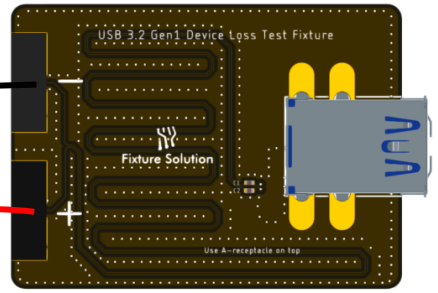
Transmitter

Device Test Measure Fixture

15cm cable

Device Under Test

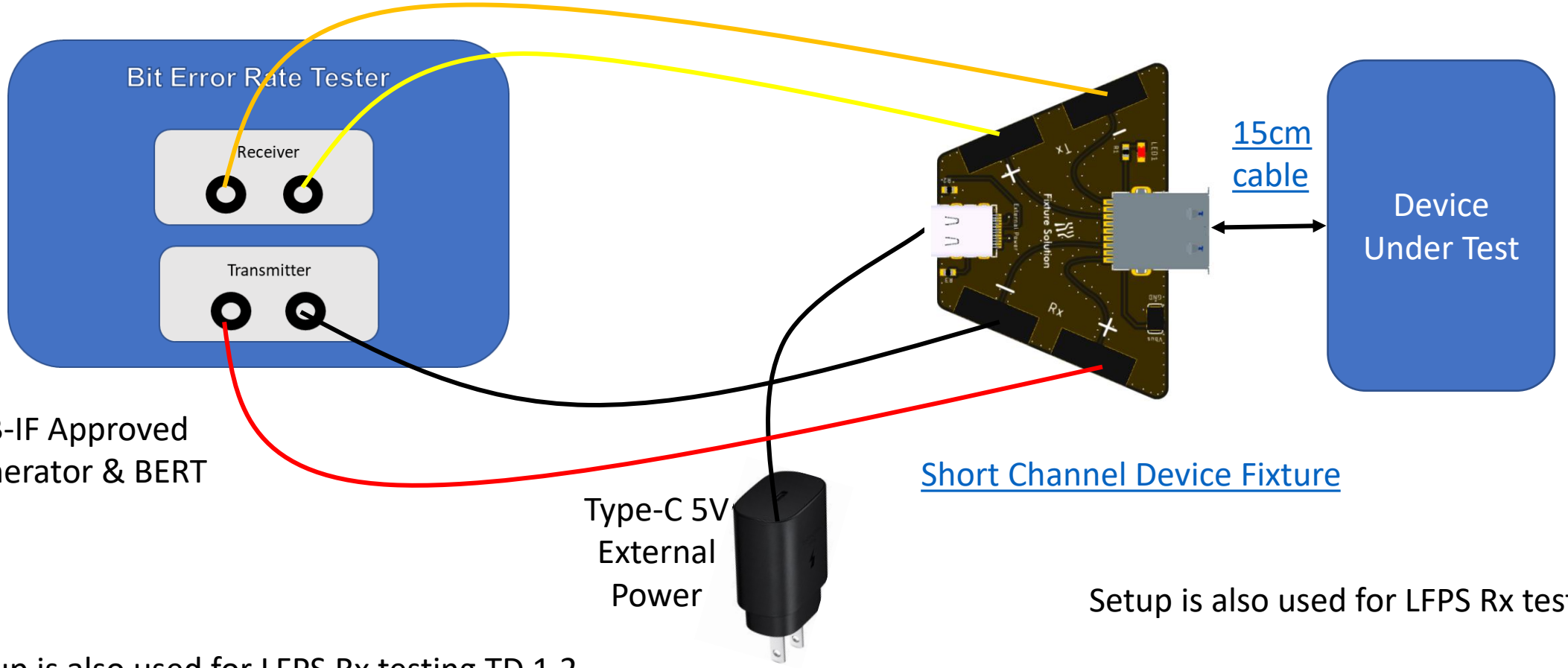
Device Loss fixture (11”)



- 3m A-B Cable -> DUT with Std B-Receptacle
- 1m A-B Cable -> DUT with micro B-Receptacle
- 15cm A-B Cable -> DUT have captive cable

USB3.2 Gen1 **Device** Rx **Short** Channel Jitter Tolerance test

Fixture Solution



USB-IF Approved Generator & BERT

Short Channel Device Fixture

Setup is also used for LFPS Rx testing TD.1.2

Setup is also used for LFPS Rx testing TD.1.2

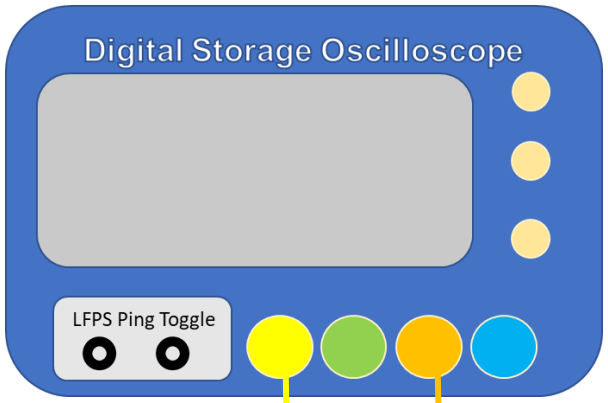
USB3.2 Gen1 Host/Hub Downstream Rx Test

1) Setup Topology based on USB 3.0 Electrical Test Fixture Topology | USB-IF
2) Covers TD.1.8 Electrical Compliance Test Specification for SuperSpeed USB 10 Gbps Rev. 1.0 | USB-IF
3) Use USB3.2 Gen1 Host Measurement Fixture (long channel)
4) Use USB3.2 Host Short Channel Fixture (short channel)
5) Use USB3.2 Gen1 Host Loss Fixture (5" PCB trace)
6) Use USB3.2 Gen1 Device Measurement Fixture
7) If DUT have Standard-B receptacle use 300cm USB 3.1 Gen1 Standard B-Plug – A-plug

Fixture Solution

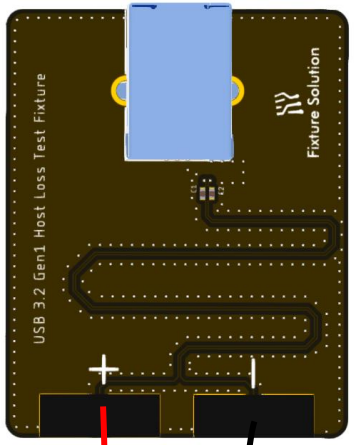
USB3.2 Gen1 **Host/Hub** Downstream Rx Calibration

Fixture Solution



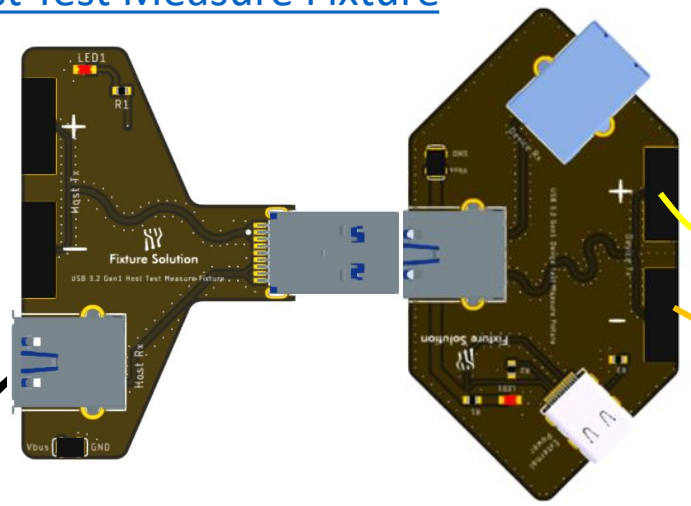
USB-IF Approved Scope

Host Loss fixture (5”)

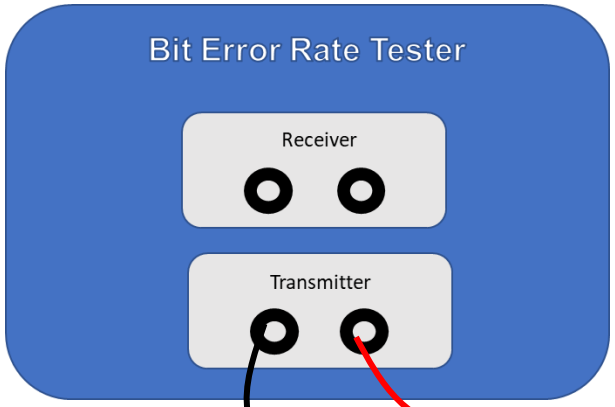


3m
A-B
Cable

Host Test Measure Fixture



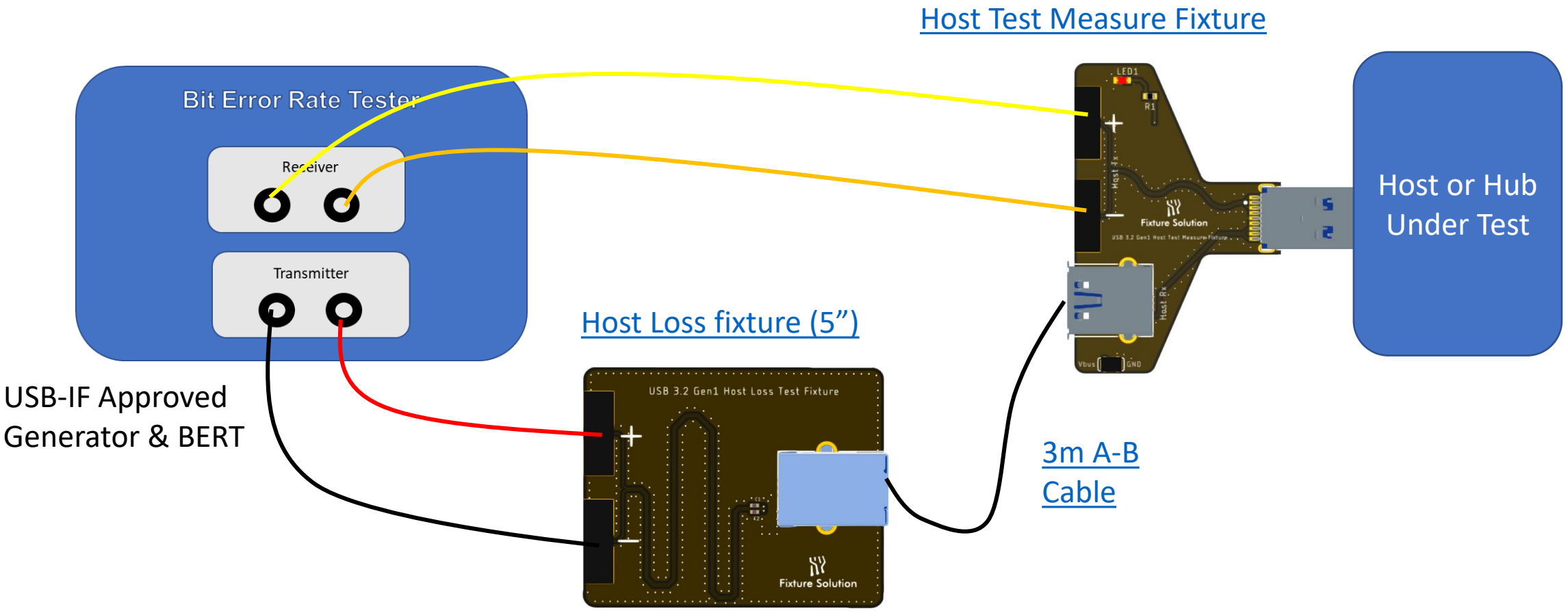
USB-IF Approved
Generator & BERT



Device Test Measure Fixture

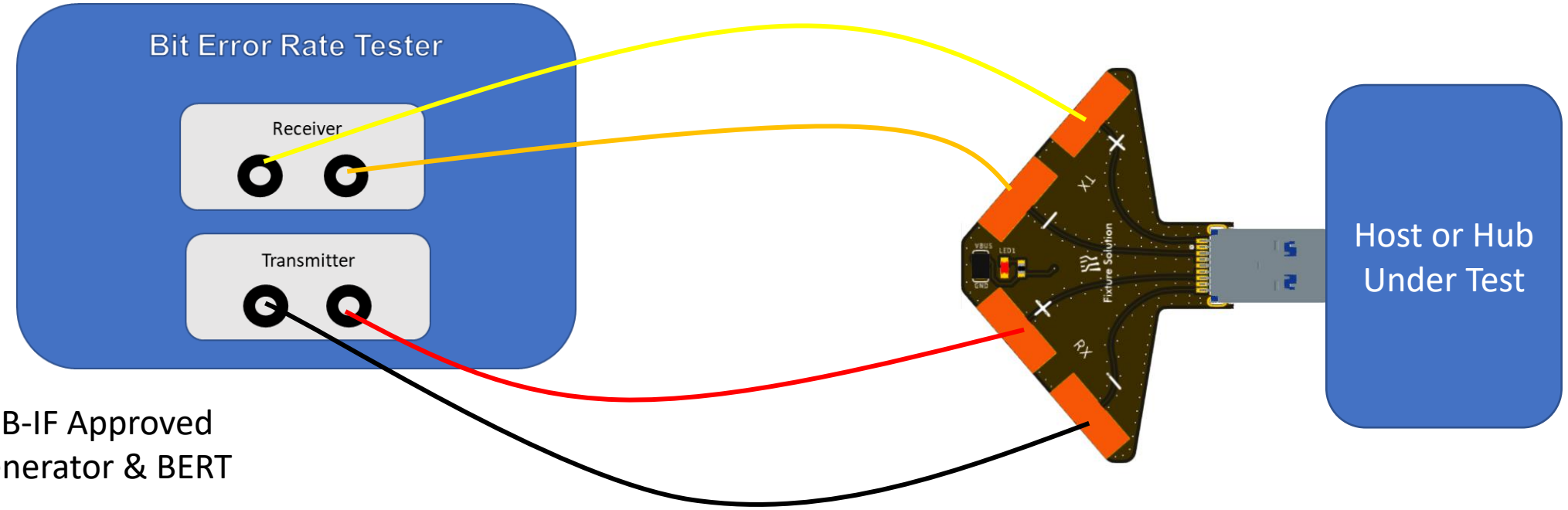
USB3.2 Gen1 **Host/Hub** Downstream Rx **Long** Channel Jitter Tolerance test

Fixture Solution



USB3.2 Gen1 **Host** Rx **Short** Channel Jitter Tolerance test

Fixture Solution



USB-IF Approved
Generator & BERT

[USB3.2 Host Short Channel Fixture]

Setup is also used for LFPS Rx testing TD.1.2