Quick Card

T-BERD®/MTS 4000v2 Modular Test Set
Fiber Complete and TestPRO Side-by-Side Referencing

This quick card describes how to perform a **Side-by-Side Reference** between two T-BERD/MTS 4000v2 test sets with 4100-series OTDR modules. This procedure should be performed on both test sets prior to running **Fiber Complete** or **TestPRO** bidirectional insertion loss (IL), optical return loss (ORL), and optical time domain reflectometry (OTDR) measurements. It is recommended to take new references when you start a new day of testing and whenever launch cables are changed. If launch cables and OTDR ports are in pristine conditions, are clean, and have passed inspection, a new reference is optional.

Equipment Requirements:

- T-BERD/MTS-2000 or 4000 with Fiber Optics Software Release V21.04 or greater
- E4100 Series OTDR Module
- FiberComplete or TestPRO options
- Fiber optic cleaning and inspection tools
- Launch Cable with connectors matching the OTDR port and Fiber Under Test (a minimum 20-meter Fiber optic patch cable or leash is recommended)
- FiberComplete/TestPRO Termination Kit, including optical couplers and non-reflecting terminations.

Figure 1: Equipment Requirements

Fiber Inspection Guidelines:

- Use the VIAVI P5000i or FiberChek Probe microscope to inspect both sides of every connection being used (OTDR Port, Launch Cable, bulkhead connectors, patch cords, etc.)
- Focus fiber on the screen. If dirty, clean the end-face.
- If it appears clean, run inspection test.
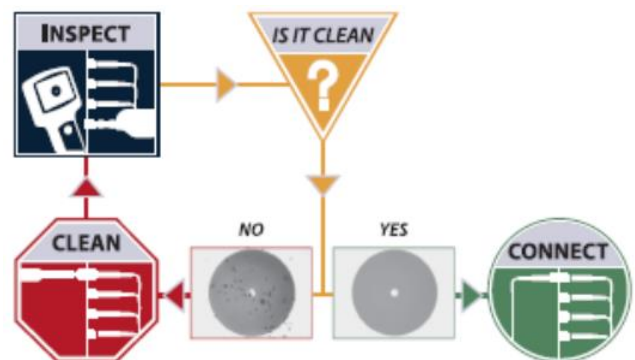- If it fails, clean the fiber and re-run inspection test. Repeat until it passes.

Figure 2: Inspect Before You Connect (IBYC)

Connect Launch Cable to OTDR port:

1. Inspect the OTDR port on top of the test set.
2. Inspect the fiber end face of Launch Cable.
3. Connect Launch Cable to the OTDR port.

Figure 3: OTDR Port Inspection

Launch FiberComplete or TestPRO:

1. Press the Power button ⏻ to start the T-BERD/MTS test instrument.

2. Tap the **FCOMP/Fiber Complete** icon [FCOMP] or **TestPRO** icon [TESTPRO] until it is yellow and highlighted [TestPRO]. The T-BERD/MTS will launch the FiberComplete/TestPRO Results screen.
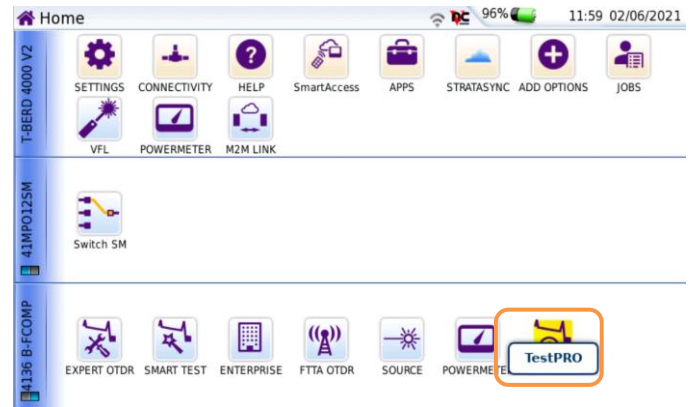

Figure 4: Fiber Optics Home screen

Perform Side by Side Reference:

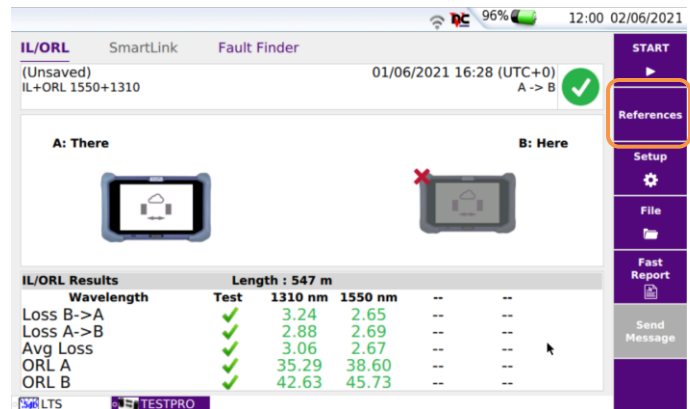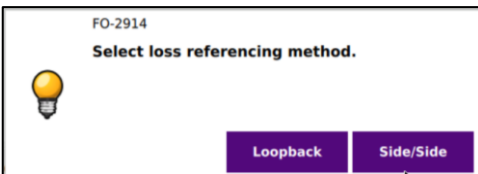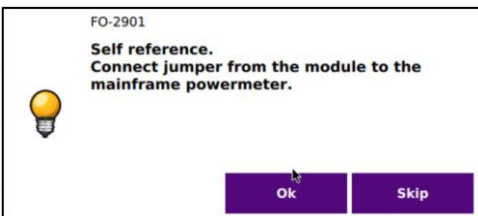1. Tap the **References** soft key to display current reference values.

Figure 5: FiberComplete/TestPRO Results screen

2. Tap the plus-sign ➕ to acquire new references.
3. A pop up will allow you select a referencing method:

4. Select **Side/Side** to perform a side-by-side reference.

5. A pop up will prompt you to connect your launch cable from the OTDR module to the mainframe Power meter:

Figure 6: Reference Values

6. Connect the Launch Cable to the power meter as pictured in *Figure 7: OTDR module connection to mainframe* .
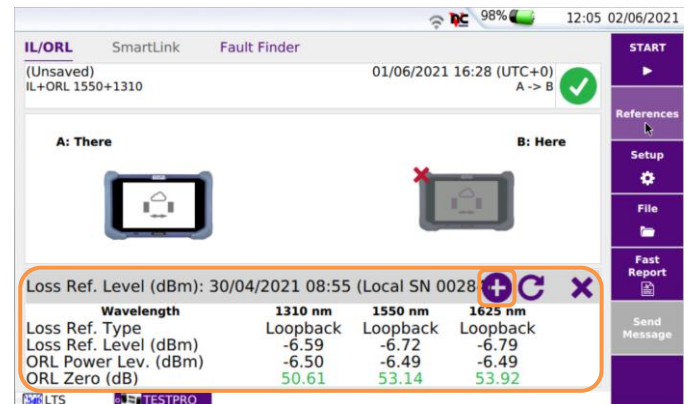
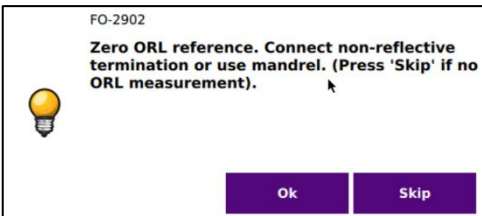7. Tap [Ok] to perform the reference.

Figure 7: OTDR module connection to mainframe power meter

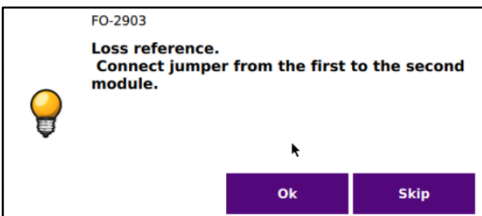8. A pop up will prompt you to connect a non-reflective termination:

9. Disconnect the launch cable from the mainframe power meter port.

10. Get the **FiberComplete/TestPRO Termination Kit** and connect an **optical coupler** and **non-reflective terminator** to your launch cable according to your connector type. An SC/UPC coupler and termination is displayed in *Figure 8: OTDR module connection to non-reflective termination.*

11. Tap [Ok] to perform the Zero ORL reference.

12. A pop up will prompt you to perform a loss reference:

13. Disconnect the launch cable from the mainframe power meter port.

14. Connect the two T-BERD/MTS OTDR modules together. "Two-Cable References" are commonly used for Telecom applications. "One-Cable" or "Three-Cable" references are used in Enterprise and FTTA applications for increased accuracy on short spans.

15. Tap [Ok] to perform the Loss reference.

16. New reference values are now displayed on the screen.

Figure 8: OTDR module connection to non-reflective termination
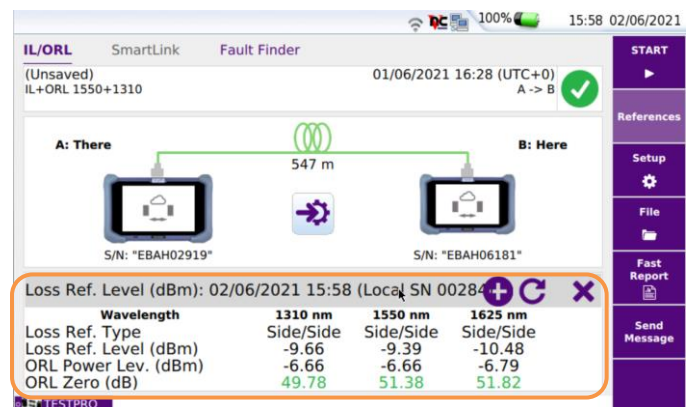

Figure 9: "Two-cable" Side by Side Reference

Figure 10: Side by Side Reference Values