

**TX6A™ Category 6A UTP FieldCord™ Connector  
And  
TX6A™ Category 6A Shielded/Outdoor FieldCord™ Connector**

**Testing Procedures (PN654)**

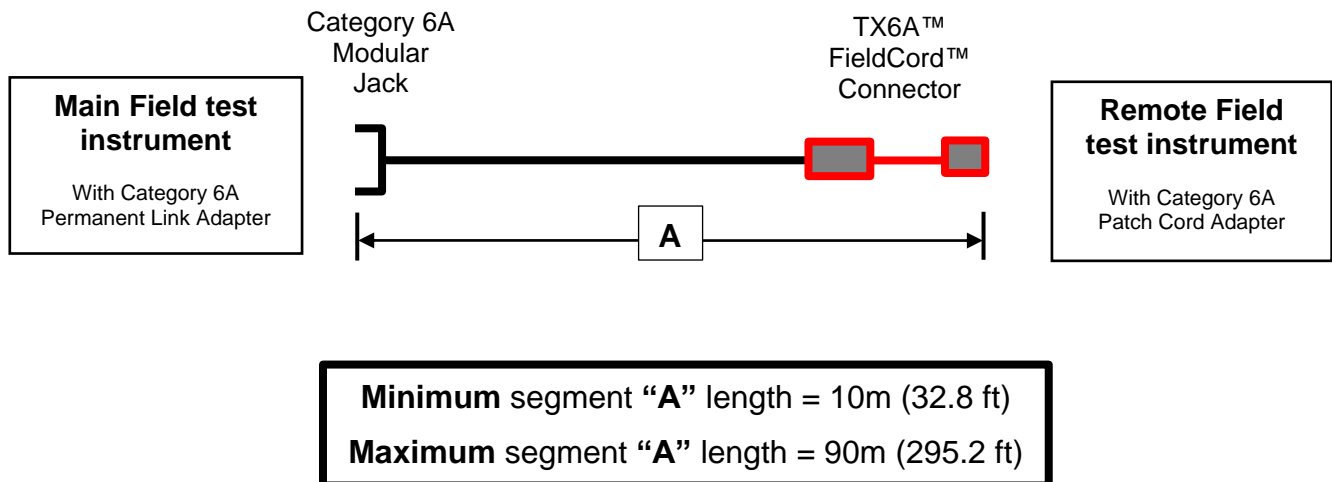
**Introduction**

Copper cabling transmission performance depends on cable characteristics, connecting hardware, patch cords and cross-connect wiring, the total number of connections, and the care with which they are installed and maintained. To qualify for a *PANDUIT* System Warranty, post-installation performance testing must be done using Panduit approved field test instruments to verify that the installed cabling will meet or exceed the performance requirements of the designated classification defined in the Commercial Building Telecommunication Standards. These standards-based test results should then be submitted to the *PANDUIT* Warranty Department for review.

*PANDUIT* offers warranty on the TX6A™ 10GIG™ Copper Cabling System for the current standards including ANSI/TIA-568.2-D to channel and permanent link, ANSI/TIA-568.2-D to MPTL for Modular Plug Terminated Link or ISO 11801 Channel, PL2, PL3, and MPTL Class EA.

**Test Configuration – Standards Model – Modular Plug Terminated Link (MPTL)**

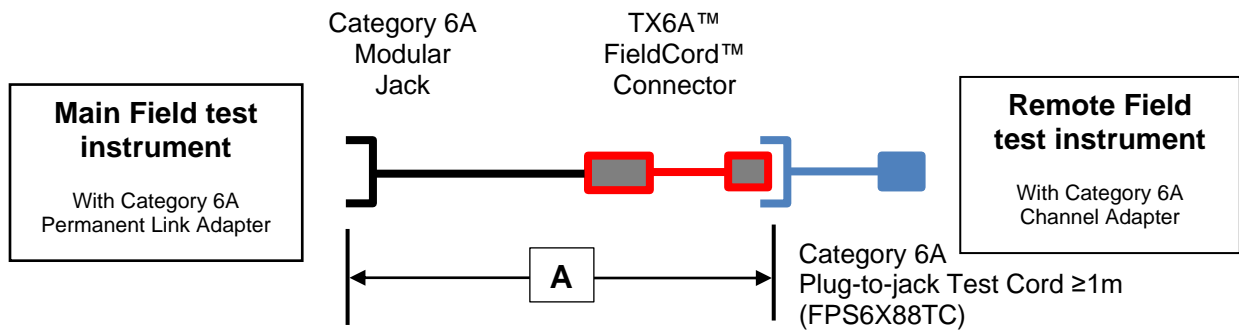
The MPTL Standards Model is to be used by system designers and users of data communications systems to verify the performance of the permanent link used in a direct-connect designed infrastructure. Permanent link performance is most critical to the end user, as this is how their network will perform. The permanent link tested in this model includes up to 90m (295.2 feet) of horizontal cable with one (1) field cord connector. The connection to the equipment at either end of a permanent link is only included in the permanent link definition if measured via this Standards Model. Configuration for testing to the Standard Model is shown below.



For Technical Support: [www.panduit.com](http://www.panduit.com)

**Test Configuration – Alternate Model**

The Alternate Model field cord connector test configuration is to be used by system designers and users of data communications systems to verify the performance of the permanent link used in a direct-connect designed infrastructure where the Standards Model is not possible. In the Alternate Model, the permanent link continues to have a maximum total horizontal cable length of 90m (295 feet) and one (1) field cord connector. The connection to the equipment at either end of a permanent link is not included in the Alternate Model testing method and therefore requires a  $\geq 1\text{m}$  plug-to-jack Test Cord (Panduit part# FPS6X88TC) to properly test the TX6A™ Field Cord Connector™ as part of the permanent link performance. Configuration for testing to the Alternate Model is shown below.



**Minimum segment "A" length = 10m (32.8 ft)**

**Maximum segment "A" length = 90m (295.2 ft)**

### **PANDUIT System Warranty**

*PANDUIT* will typically provide a system warranty in the following way:

The warranty of the TX6A™ UTP FieldCord™ Connector and the TX6A™ Shielded/Outdoor FieldCord™ Connector offered by *PANDUIT* is based on passing permanent link or channel test results.

Passing test results must be obtained using an approved field test instrument. *PANDUIT* Corp. evaluates each type of handheld test instrument before approving it for use in the field. This ensures the integrity of the test data submitted for warranty.

Current field testers approved for 10Gig/Category 6A can be found at:

<https://partners.panduit.com/resource/1604068205000/WarrantyApprovedCopperTesters>

### **Testing Required for Category 6A Direct Attach Permanent Link Warranty**

*PANDUIT* requires that internal permanent link performance be verified for each link to obtain the warranty. *PANDUIT* does not require that field alien crosstalk testing be performed, as the TX6A™ Copper Cabling System has been thoroughly lab tested and verified to meet alien crosstalk requirements under worse case conditions of a 6-around-1 tightly bundled configuration.

### **Fluke DSX-5000 Series Digital Cable Analyzer**

*PANDUIT* has evaluated the Fluke DSX-5000 Series Digital Cable Analyzer and approves the use of this tester for the certification of installed Category 6A direct attach cabling permanent links. To verify that the installed cabling will meet or exceed the performance requirements of the designated classification, it is important that the following steps are followed.

### **Permanent Link Testing (Standards MPTL Method)**

- 1) Verify that your DSX-5000 Series tester has been calibrated by Fluke Networks within the past 12 months.
- 2) Verify that your DSX-5000 Series tester has the most up-to-date software. The latest software updates can be found on the Fluke website at:  
<http://www.flukenetworks.com/support/downloads>
- 3) Perform a Set Reference procedure in the special functions prior to testing. DSX Reference Module part# DSX-REFMOD, is recommended for Category 6A testing.

For detailed instructions on Set Reference procedure, refer to Fluke Network's User's Manuals for the tester you are using. Fluke Manuals can be found by searching at:  
<http://www.flukenetworks.com/support/manuals>

**Note:** Fluke Networks also recommends factory calibration once a year to ensure that the test tool meets or exceeds the published accuracy specifications.

- 4) Select the Fluke Permanent Link Adapter (DSX-PLA001) and attach it to the DSX-5000 Series Main unit.
- 5) Select the Fluke Ca6A Patch Cord Adapter (DSX-PC6A) and attach it to the DSX-5000 Series Remote unit.
- 6) When testing a shielded solution, be sure to select the appropriate cable type and to turn "Shield Test" to On
- 7) Select from the following Fluke Test Limits, for which warranty is desired:
  - **TIA Cat 6A MPTL**
  - **ISO ClassE<sub>A</sub> MPTL**

---

**For Technical Support: [www.panduit.com](http://www.panduit.com)**

- 8) Begin testing your installed permanent link with the Fluke DSX-5000 Series Digital Cable Analyzer and save all test results.
- 9) Troubleshoot and repair any failing permanent links. Permanent links resulting in a PASS\* are considered a PASS and will be acceptable for warranty.
- 10) Submit electronic permanent link test reports to the *PANDUIT* Warranty Department with all required warranty paperwork. A warranty will then be given based on passing test results.

**Note:** The Fluke HDTDR and HDTDX analyzer are very helpful when troubleshooting test results. Panduit recommends the HDTDR and the HDTDX be turned on for ALL tests. Submit electronic permanent link test reports to the *PANDUIT* Warranty Department with all required warranty paperwork. A warranty will then be given based on passing test results.

Note: *PANDUIT* recommends for installers to install and test multiple permanent links before completing the entire system.

### **Permanent Link Testing (Alternate Method)**

- 1) Verify that your DSX-5000 Series tester has been calibrated by Fluke Networks within the past 12 months.
- 2) Verify your DSX-5000 Series tester has the most up-to-date software. The latest software updates can be found on the Fluke website at:  
<http://www.flukenetworks.com/support/downloads>
- 3) Perform a Set Reference procedure in the special functions prior to testing. DSX Reference Module part# DSX-REFMOD, is recommended for Category 6A testing.

For detailed instructions on Set Reference procedure, refer to Fluke Network's User's Manuals for the tester you are using. Fluke Manuals can be found by searching at:  
<http://www.flukenetworks.com/support/manuals>

- 4) Select the Fluke Permanent Link Adapter (DSX-PLA001) and attach it to the DSX-5000 Series Main unit.
- 5) Select the Fluke Channel Adapter (# DSX-CHA004S) and attach it to the DSX-5000 Series Remote unit.
- 6) When testing a shielded solution, be sure to select the appropriate cable type and to turn "Shield Test" to On.
- 7) Select from the following Fluke Test Limits, for which warranty is desired:
  - **TIA Cat 6A Permanent Link**
  - **ISO11801 PL2 or ISO11801 PL3 ClassE<sub>A</sub> (+ALL)**
- 8) Begin testing your installed permanent link with the Fluke DSX-5000 Series Digital Cable Analyzer and save all test results.
- 9) Troubleshoot and repair any failing permanent links. Permanent links resulting in a PASS\* are considered a PASS and will be acceptable for warranty.
- 10) Submit electronic permanent link test reports to the *PANDUIT* Warranty Department with all required warranty paperwork.

**Note:** The Fluke HDTDR and HDTDX analyzer are very helpful when troubleshooting test results. Panduit recommends the HDTDX and the HDTDR be turned on for ALL tests. Submit electronic permanent link test reports to the *PANDUIT* Warranty Department with all required warranty paperwork. A warranty will then be given based on passing test results.

**Note:** *PANDUIT* recommends installers install and test multiple permanent links before completing the entire system.

Revision	Date	By	Description
R 3.0	10/24/2022	GFE	Update to combine UTP and FTP solution
R 2.0			
R 1.0			Initial release