

UEN Fiber Installation Policy

The Utah Education Network Field Operations Group has trained and established best practices for the termination, testing, and installation of UEN supported fiber optic infrastructure, patch cabling and cable management within UEN supported facilities throughout Utah.

To insure the consistent and proper installation of UEN provided fiber optic based services all fiber optic infrastructure must be installed and maintained by a UEN Field Engineer with one or more the following training and certifications. The intent is to provide a consistent and reliable service based on current best practices, ensuring all fiber infrastructure is properly installed, labeled, cleaned, routed and mated based on current practices.

UEN Field Operations will strive to be responsive to requests for installation and support.

Training and Certification

Fiber Tech I – Certified Fiber Optic Technician (CFOT)

Training:

CFOT class or equivalent.

Installation and Maintenance:

A Fiber Tech1 can place/install fiber in fiber management trays, will clean and inspect fiber ends prior to placement, and connect fiber to FDPs and equipment.

Tools:

- EXFO FIP-400 USB fiber inspection probe with ConnectorMax.
- VFL Power meter and source. Corning, EXFO or equivalent.
- Fiber cleaning kit that includes Cletop, stick-its, liquid fiber cleaner and lint free pads.
- Brady fiber cable labeler that produces Flag labels.

Fiber Tech II – Certified Fiber Optic Technician Specialized (CFOT/S)

Training:

CFOT/S Training and certification or equivalent.

Installation and Maintenance:

A Fiber Tech2 can place/install fiber in fiber management trays, will clean and inspect fiber ends prior to placement, and connect fiber to FDPs and equipment. In addition a Tech2 conducts fiber testing for the purpose of validating proper continuity associated

UEN Fiber Policy

with reflection, power, loss of signal (Fault Locator). In addition the Tech2 conducts circuit tests for error generation and capacity.

To conduct these tests the Tech2 must be trained in the use of an optical time-domain reflectometer (OTDR). UEN currently uses the EXFO 500 and the EXFO FTB-1.

Tools:

- EXFO Test Set Equipped with the following
 - OTDR
 - 8510 test set
- Fiber Fusion Splicer.
- All associated test connectors, splice on connectors (SOC), pig-tails
- EXFO FIP-400 USB fiber inspection probe with ConnectorMax.
- VFL Power meter and source. Corning, EXFO or equivalent.
- Fiber cleaning kit that includes Cletop, stick-its, liquid fiber cleaner and lint free pads.
- Brady fiber cable labeler that produces Flag labels.

Fiber Tester – Certified Fiber Optic Technician Specialized – Advanced

This includes all Tech2 responsibilities and tools plus the following. Advanced specialized training associated with conducting Fiber Characterization, advanced capacity testing including 10G Ethernet Testing. These tests include chromatic dispersion (CD), Polarization Mode Dispersion (PMD), Fast Test, Optical Spectrum Analysis.

Tools:

- EXFO 8510G Test Set Equipped with the following
 - OTDR
 - 8510 test set
 - 10G Testing
 - Spectrum Analyzer
 - PMD/CD
 - Fast Test
- Fiber Fusion Splicer.
- All associated test connectors, splice on connectors (SOC), pig-tails
- EXFO FIP-400 USB fiber inspection probe with ConnectorMax.
- VFL Power meter and source. Corning, EXFO or equivalent.
- Fiber cleaning kit that includes Cletop, stick-its, liquid fiber cleaner and lint free pads.
- Brady fiber cable labeler that produces Flag labels.

UEN Fiber Installation Policy

Fiber cleaning is one of the most common causes of fiber problems and the simplest to avoid with proper training and tools. All patch cords should be labeled at both ends with a flag label with the following information on them source, destination and final destination. So a label should read

with a FDP

Equipment name-slot-port

or

without a FDP

Source

FDP-panel- ports

Destination

Equipment name-slot-port

end to end circuit description

end to end circuit description

Fiber should be ran in appropriate fiber management (do not mix fiber and copper)and groomed in, the length of the jumper should be as close to what is needed as possible. Do not put a 3 meter jumper where a 1 meter will work avoid looping the fiber as much as possible (If you do not have the right Jumper do not place it). Any client fiber goes to a UEN FDP prior to UEN equipment. Equipment to equipment connections will be OM3 fiber. Rack to Rack connections should go to a FDP's with distribution cables tying them together when possible.

The flow for placing fiber will be as follows:

1 determine path

2 select fiber type

the next 2 may be done in any order

3 Run fiber

4 Label Fiber

5 Scope fiber

6 Clean Fiber

7 Scope Fiber (if not clean repeat step 6 till clean or discard fiber)

8 Connect Fiber