

Application Note

# CommScope® imVision® with integrated VIAVI FTH-5000

## Introduction

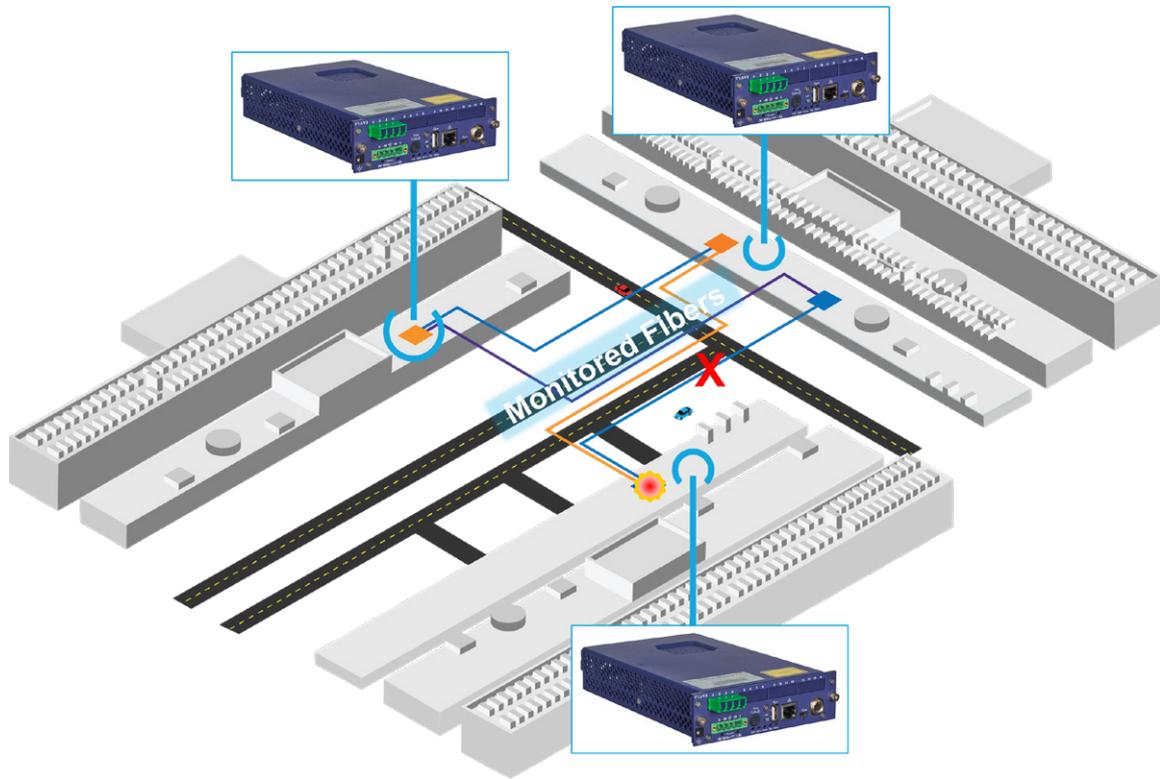
Installing, managing and tracking thousands of fiber and copper connections and cabling routes inside a data center, commercial buildings and in campus environment is a real challenge. If not done properly it can lead to many problems during operation of data centers and office facilities, or in other words, an inside plant cabling infrastructure (ISP). To avoid these issues, more automation and control is the key. By adopting an Automated Infrastructure Management (AIM) solution, customers can streamline provisioning and monitoring of network connectivity, gain an accurate view of what is connected where in the network, reduce downtime by real-time notification of unauthorized changes and produce up-to-date reports on the state of the infrastructure. Such solution could prevent site operations from remaining in an N+1 condition.

## AIM Use Case

### CommScope imVision and VIAVI FTH-5000

The above capabilities are supported for cabling infrastructure that is installed inside commercial buildings and data centers. For the outside plant (OSP), cabling AIM systems are capable of monitoring cabling connections at the point where they enter a building and terminate to an intelligent patch panel in a Building Entrance Room. By integrating the VIAVI Fiber Test Head (FTH-5000), AIM systems like CommScope imVision add real-time monitoring of OSP cabling as well, and therefore allow AIM systems to gain real-time visibility into all segments of cabling infrastructure. The system is optimized for the data center environment and can execute both dark fiber monitoring or lit fiber monitoring on all active cables.



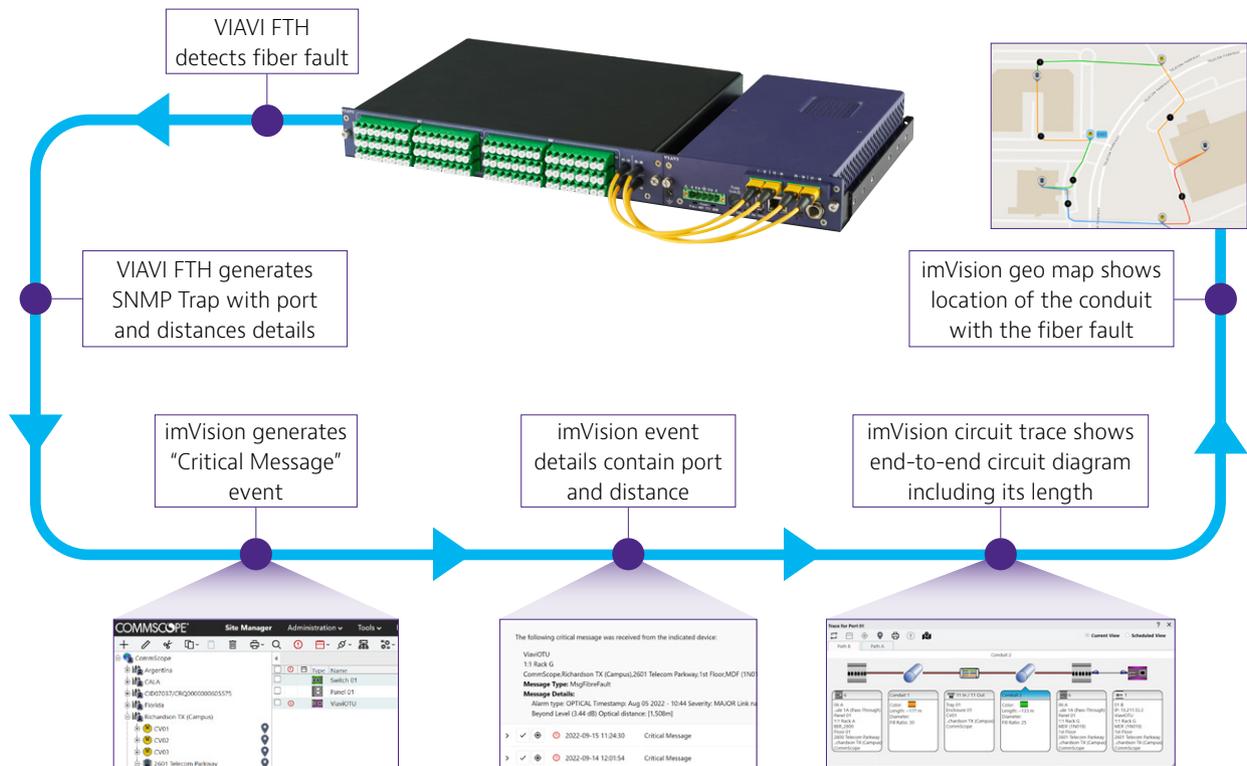


FTH-5000 fiber test heads are installed in racks typically located in the Building Entrance Room where campus backbone cables terminate. The FTH-5000 combines optical time domain reflectometry (OTDR) and optical-switch technology to provide continuous fiber monitoring. It uses an out-of-band wavelength, typically 1650 nm, to ensure the monitoring signal doesn't interfere with the traffic signal. As soon as an incident happens on the monitored link, the test head automatically detects and locates the fault/impairment. The distance to the optical fault, the type of faults (deterioration, breaks, etc.) and the measured parameters are then sent by simple network management protocol (SNMP) to the AIM system.

## VIAVI Fiber Test Head (FTH) Integration with imVision Overview

VIAVI FTH-5000 monitors the integrity of the OSP cabling (for example, in data center interconnects, or DCIs), while the imVision System Manager software documents OSP cabling connectivity including OSP cable routing using geomap. The integration enables sending information about fiber faults in OSP fiber cabling via an SNMP trap from an FTH-5000 to the imVision System Manager software, alerting imVision users about any fiber faults in OSP cabling in real time and allowing users to identify the physical location of fiber faults on geomap.

The following diagrams an FTH-5000 integration workflow with imVision:



Following the above diagram:

- First, the FTH-5000 is configured to send SNMP traps to the imVision System Manager.
- Next, the System Manager software needs to be configured to receive and process SNMP traps from the FTH-5000.
- When an SNMP trap from FTH-5000 is received by the System Manager, a Priority event icon will be displayed next to the FTH-5000 in question.
- By opening the Event Log window, the details of the received message are displayed.
- Details show that a Critical Message event about Major Fiber Fault was generated for a specific port on the FTH-5000.
- The distance for this fiber fault from the FTH-5000 location is also specified in the event details
- Displaying a circuit trace for the specific port on FTH-5000 will show an OSP cable path with for the selected port including lengths of each conduit segment that is part of this path.
- Finally, by displaying the circuit trace on a geomap and by comparing the distance to the fiber fault with conduit's length we can determine an approximate geo location for this fiber fault prior to dispatching a field crew to inspect and fix this fault.

## About CommScope imVision

imVision is CommScope's standards-compliant Automated Infrastructure Management (AIM) system as defined in the ISO/IEC 18598 standard. AIM automates discovery and documentation of network cabling infrastructure in the data center or a commercial building.

An AIM system consists of intelligent hardware and software components that are designed to detect the insertion and removal of patch cords. AIM system also provides capability to discover presence of networked devices and to pinpoint their physical location within facilities.

AIM solutions like CommScope's imVision system deliver physical security for the network by using intelligent hardware that enables monitoring the network for connectivity changes in real time. AIM systems provide information on what network assets are now either connected or disconnected from the network including location of these assets.

## About VIAVI FTH-5000

A single FTH-5000 can continuously monitor 48 fibers (dark or lit) while occupying only one Rack Unit, while the FTH web interface may be used to quickly set up monitoring routine parameters and alarm thresholds.

VIAVI FTH solutions help data center operators quickly pinpoint any fiber issue (degradation, breaks, attenuation due to fiber intrusion, etc.) on a DCI connection, significantly reducing Mean-Time-To-Repair (MTTR). Alert messages are automatically sent to the network operating system with the exact location and type of fault, allowing for efficient dispatch of the repair team to directly fix the issue.

FTH-5000 can also be used to quickly validate the health of unlit DCI fibers to minimize any delay during fiber turnup.



Contact Us

**+1 844 GO VIAVI**  
(+1 844 468 4284)

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