

case study

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CIENA
www.ciena.com

Location:
California, USA

Vertical Market:
Technology

Application:
Data Center &
Technology Lab

Superior Reliability for the Service Provider's Service Provider



CIENA's Bay Area Office, San Jose, California

CIENA® Corporation, a leading provider of global network solutions, develops innovative transport and switching solutions for metropolitan and core telecommunications networks. Customers include long-distance carriers, local exchange carriers, Internet service providers, wireless and wholesale carriers, systems integrators, governments and large enterprises. CIENA's solutions enable service providers to provision, manage and deliver economical, high-bandwidth services to their customers worldwide.

In a drive to improve continuity across product lines and provide a more comprehensive, integrated solution for their customers, CIENA has merged its R&D facilities. The consolidation of the Cupertino and Fremont operations into CIENA's 350,000 sq.ft. campus, in San Jose, was completed in January 2003.



The Challenge

CIENA needed a solution that could be deployed quickly, and provide sufficient flexibility for future product development and testing.

The new facility, which included both a demo lab and interoperability lab for customer testing and evaluation, was intended to be a showcase for CIENA. The infrastructure required to run this sophisticated network had to be capable of providing reliable, high performance service, to complement and support CIENA's product offering.

Port density was also an issue, as CIENA was conscious of expansion requirements - engineers didn't want to come back and add bays at a later stage to accommodate new products.

Fitting the maximum number of bays into their data center style main distribution frame (MDF) and intermediate distribution frame (IDF) design was critical to provisioning for the future.

CIENA

PANDUIT® *Preferred Products*

144 port *OPTICOM®*
Fiber Optic Enclosures

Singlemode
SC Fiber Connectors &
Duplex Adapters

FIBERRUNNER®
Routing System

Stackable Cable Rack
Spacers

The number of fiber optic cables, connectors and enclosures required to support this plan was significant. The matrix developed by

RK Electric (www.rkelectric.com), CIENA's preferred installation partner, included 80,000 SC connectors, 4 million feet of singlemode fiber cable, and all the associated hardware and routing equipment required to deploy the network.

Fast Facts

- 77,750 *PANDUIT* SC connectors were installed. 99.7% passed testing the first time, with a loss of less than 0.03dB

Criteria for Selection

In order to realize this consolidation plan, CIENA needed a vendor partner who could provide a scalable solution for fiber distribution. Density and floor space requirements were also a concern, as well as the vendor's ability to deliver within the limited time frame.



Why PANDUIT?

When evaluating possible solutions for the CIENA network, RK Electric's VP of Data Communications, Dale Swanson, had to take a number of factors into consideration before making recommendations. "We had used other systems in the past, but were looking for something more versatile to take CIENA into the future. *PANDUIT*® had solutions that met the density and reliability requirements and was the only company able to deliver their products within the available time-line."



PANDUIT OPTICOM® enclosures with SC connectors were chosen for the main distribution frame (MDF) and intermediate distribution frame (IDF) within the labs. They provided the high density required, while allowing simple access for day-to-day maintenance. Connector performance and reliability was "phenomenal", according to Swanson.

Above the network bays, millions of feet of cable had to be managed, routed and protected. The *PANDUIT FIBERRUNNER*® system was used in conjunction with *PANDUIT* Cable Rack Spacers. The high capacity *FIBERRUNNER* system provided CIENA with the desired level of flexibility, through its wide range of fittings and brackets.



Communication cable management accessories for ladder racks, including the Stackable Cable Rack Spacers, ensured that the vast quantity of fiber cable was managed correctly. The *PANDUIT* Stackable Cable Rack Spacers separate and support cable to prevent pinch points between the bottom row of cable and the rung as a result of the weight of multiple cable layers applied on top of each other.

Fast Facts

- *FIBERRUNNER QUICKLOCK*™ Couplers allow connections to be made in less than 5 seconds, without the use of tools

The superior quality and performance provided by *PANDUIT* products also made deployment faster. "Anything else would have

taken more time to deploy", said Paul Intrieri, Senior Manager, Facilities at CIENA. "*PANDUIT* delivered solutions in a most outstanding way. We have the comfort factor of knowing that this fiber infrastructure will carry CIENA into the future."

" PANDUIT delivered solutions in a most outstanding way. We have the comfort factor of knowing that this fiber infrastructure will carry CIENA into the future."

"Without PANDUIT and RK Electric's superior quality and ability to think outside the box, the project would never have happened in such a short period of time. It's a credit to them that they were able to deliver the level of quality and reliability achieved."



Paul Intrieri

Senior Manager, Facilities
CIENA

The PANDUIT® Solution

PANDUIT 144 port OPTICOM® fiber optic rack mount enclosures provided Ciena with a high density system for managing fiber connections. The enclosure can serve as an interconnect or a cross-connect when interfacing with equipment. It can also be specified for use in a main distribution frame (MDF), intermediate distribution frame (IDF) or telecommunications room.

PANDUIT fiber optic SC connectors were selected because they have a robust design that provides network reliability and meets or exceeds requirements of TIA/EIA-568-B.3. Utilization of proven 2.5mm ferrule technology offered CIENA strength and reliability.

CIENA® realized that the PANDUIT high capacity FIBERRUNNER® Fiber Routing System was the answer to its unique network requirements. Challenged by space restrictions within its labs, the open access/above cabinet deployment of the routing system was especially appealing due to several FIBERRUNNER system benefits:



Lowest Installed Cost

- **QUIKLock™ couplers allow connections to be made in less than 5 seconds without the need for tools.**
- **QUIKLock brackets reduce the time taken to attach channels onto brackets.**
- **System covers snap-on without the need for fasteners or tools.**

Versatile System

- **Wide variety of fittings allow you to meet virtually any system configuration.**
- **Multiple spill-out fittings provide safe method of transitioning cable from horizontal to vertical runs.**

Low Cost of Ownership

- **Split covers on fittings enable you to add cables without removing covers.**
- **Fittings have minimum 2" bend radius control to protect fibers and prevent signal degradation.**
- **Snap-on hinged covers can stay open at multiple positions between 30 and 90 degrees enabling you to partially open cover to move, add or change cabling.**

The density and weight of the fiber cable runs at Ciena could have caused performance issues due to cable pinching on the ladder rack. PANDUIT Stackable Cable Rack Spacers were used to separate individual cables, support and disperse the load and prevent potential damage or even down-time.

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