

BROADBAND COMMUNITIES'

22nd Annual List of Leading Broadband Technologies and Services

The latest offerings from top broadband hardware and software suppliers, distributors and service providers

ADTRAN

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Contact: Emily Mundt, Solutions Marketing Manager

Customers: MDUs/PCOs, telcos, municipalities, electric co-ops, tribal communities

Products/Services: Active electronics – wireline; active electronics – wireless; passives – outside plant; passives – inside plant; customer-premises equipment; other managed services; planning, design or construction; training; customer-facing software

SDX 6330 Disaggregated OLT: The SDX 6330 10 Gbps Combo PON fiber access platform enables service providers to rapidly and cost-effectively connect homes and businesses with fiber-based broadband. The new open and disaggregated solution offers the industry's highest port density and is the first optical line terminal (OLT) with integrated 400 Gbps uplinks. It will empower operators to accelerate fiber rollout and easily scale their networks to support dense urban, suburban, and rural deployments. With enhanced energy efficiency, the highly compact, temperature-hardened fiber access platform will be important for meeting sustainability targets and addressing market demands for both retail and wholesale providers.

The SDX 6330 is Adtran's third generation of open and disaggregated OLT devices. With 48 ports of Combo PON in a compact and power-efficient design, it sets a new benchmark



for lowering the total cost of deployment for 10 Gbps services. Designed to deliver network simplicity and sustainability at scale, the solution offers deployment versatility and improved reach. Featuring open interfaces, it provides the freedom to build best-in-class infrastructure with technology from multiple vendors. Its versatile architecture supports a wide range of network topologies and coherent optics. The SDX 6330 also helps meet corporate sustainability objectives by reducing power demand and landfill requirements.

Our SDX 6330 offers the network simplicity, sustainability, and scalability needed to power the gigabit society. That's what makes it a compelling alternative to chassis-based architectures. It's the solution many operators are searching for as they look to expand their market share while improving customer experience. www.adtran.com/sdx6330

CDG – COMMUNICATIONS DATA GROUP

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Champaign, IL 61822
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Contact: Andrew Sabatuk,
Vice President – Sales
Rob Labonte, Account Executive

Customers: MDUs/PCOs, telcos, cable TV, municipalities, MSOs

Products/Services: Back-office software; customer-facing software, BSS/OSS software

Communications Data Group (CDG) has been a leading provider of telecom billing solutions for more than 50 years. CDG's innovative MBS and BDS-I applications provide operator-driven billing and operational support solutions for voice, video, data, and circuit services for retail and wholesale telecommunications carriers and service providers.

MBS is an open architecture, module-based solution for managing your consumer and enterprise accounts

MBS

Subscriber Billing and Management

BDS-I

Circuit Billing and Ordering

MEDIATION

Data Processing and Prep

and services. MBS offers scalable consumer modules for customer care, network elements, ticketing, SAM – service provisioning, E-Care (EBPP), workflow, and CRM prospects, as well as supporting integrations with other industry solutions, including financial, mapping, facilities management, call center, and CRM products.

BDS-I is the industry-leading billing and ordering solution for access, interconnection, and other circuit-related services such as backhaul, Ethernet and dark fiber. It provides fully mechanized billings that can be easily processed and verified.

Mediation provides tools to filter, process, track, prepare, and audit incoming usage records. Audit incoming records to gain the business intelligence, revenue assurance, and fraud detection you need to accurately prepare your records for downstream distribution. Mediation can be paired with MBS or BDS-I or used as a stand-alone for flat rates.

CHARLES INDUSTRIES, LLC

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Contact: Debisree Saha



Customers: Telcos, cable TV, municipalities

Products/Services: Active electronics – wireline; active electronics – wireless; passives – outside plant; customer-premises equipment; passive optical LAN; other managed services; planning, design or construction; back-office software; optical fiber and cable



Charles Industries Walk-In Cabinet (WIC) is a protective walk-in enclosure that houses an integrated system of electronic components and equipment that can serve fiber and copper interfaces. The WIC offers a lighter-weight alternative to a concrete base station, providing a lower overall cost of ownership. With the use of the Charles Thermal Management System (CTMS) and the Intelligent Ventilation System (IVS), the closed-loop thermal solution carefully regulates the interior temperature to ensure optimal performance, requires no maintenance, and offers energy savings over concrete buildings and huts.

Constructed with durable 12-gauge welded steel, the WIC is resistant to rust, corrosion, chipping, and fading. The WIC is available in a variety of flexible configurations that allow for quick customization of dimensions and functionality. When combined with our optimized manufacturing facilities, customers can get a fast “right fit” solution for a variety of remote sites.

CLEARFIELD

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Customers: MDUs/PCOs,
telcos, cable TV, hospitality,
municipalities, electric
co-ops, military

Products/Services: Passives – outside plant; passives – inside
plant; customer-premises equipment; passive optical LAN;
training; optical fiber and cable

Clearfield is enabling the lifestyle that better broadband provides by removing the barriers to rapid fiber deployments.

A fiber-to-anywhere company, Clearfield offers a fiber-to-anywhere product platform. Rather than a predetermined, scripted solution, Clearfield promises a product design methodology that addresses your unique requirements while providing the lowest total cost of ownership. With labor-light technologies and products designed for scalable deployment, craft-friendly operation and unsurpassed performance, Clearfield innovates to reduce your pre-engineering and skilled labor requirements.

Offering a streamlined, practical approach to the distribution, consolidation, management and protection of fiber, Clearfield's line of panels, frames and cabinets, optical components and full range of fiber optic assemblies and patch cords are designed for scalable deployment, craft-friendly operation and unsurpassed performance.

Clearfield's FieldShield and YOURx fiber delivery systems combine to deliver a simple, fast, fiber pathway and solve the issue of slack storage through all points of the network to provide a total end-to-end solution. FieldShield pushable fiber, microduct and last-mile drop technologies are saving the provider time and money with labor-light designs that reduce labor and skill at installation and at the pre-engineering stage.

Joining Clearfield's family of outside plant terminals, Clearfield recently announced the SeeChange™ Access



CLEARFIELD



Terminal and Hardened Connector System to speed the final connection with a small, craft-friendly, carrier-grade access terminal ideal for any fiber network deployment requiring a plug-and-play approach.

The game-changing SeeChange™ Access Terminal and precisely designed hardened connectors speed the final connection through:

- Off-the-shelf availability
- Minimizing inventory management
- Cutting your design time
- Simplifying your installations

Whether you're delivering fiber to the home, business or cell site, Clearfield has the flexibility to deploy the product platform for your entire range of applications.

CROWNTech PHOTONICS

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Customers: MDUs/PCOs, telcos, cable TV, municipalities
Products/Services: Passives – outside plant; passives – inside
plant; passive optical LAN

Crowntech Photonics has a rich history of working with OEMs to provide fast turn, customized products on fast lead times. All Crowntech Photonics (CTP) passive components



comply with Telcordia GR-1221 and GR-1209 requirements. CTP produces a line of DWDM LGX modules that are scalable for network upgrades and deployments providing increased bandwidth over a single fiber. CTP uses thin film filters providing low insertion loss and high isolation. Modules can be installed in standard LGX chassis equipped with LC bulkheads in select configurations from four to 40 channels. CTP supplies SC bulkhead modules in single circuit packages from four to 20 channels. DWDM modules are available with 100 GHz spaced central wavelength options. All DWDM modules are factory-assembled in an LGX-compatible footprint (1 or 3 RU chassis) with all industry standard connector options. CTP's products are ITU compliant. Common applications include: RPHY for DOCSIS/CATV systems, long haul and metro transport networks, access networks and 5G/small-cell wireless backhaul.

CTP also has an extensive line of splitter modules from 1x2 to 1x32 split ratios with either LC or SC connectors. Splitter modules can be deployed in a central office environment, fiber distribution hub or enclosures to support XGS-PON/FTTH, data center and CATV deployments. Splitter modules can be installed in 1 or 3RU panels. Splitter modules can be also bundled into IP65/68 enclosures for distribution network deployments.

EIA Mounting Standards 19 or 23 inch

- Slide in tray with latch lock
- Interchangeable LGX adapter plates for custom combinations
- Integrated into IP-rated enclosures for OSP hardened environments

EPB BROADBAND SOLUTIONS

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P: 423-648-1279

W: <https://business.epb.com/wholesale-services/>

Contact: Dustin Keith



Broadband Solutions

Customers: Telcos, cable TV, municipalities, electric co-ops

Products/Services: Other managed services; planning, design or construction; training

For those empowering their communities with broadband, EPB is ready to help.

As a utility, we understand the vital role that others like us play in their communities. We built America's first gig-speed network and faced the challenges that come with delivering critical broadband and smart-grid technologies that enhance quality of life. We don't just understand every aspect of the products, we know how customers use them.



EPB is ready to share our experience, and results. A 2021 independent study documented \$2.69 billion in benefit for our hometown in the first 10 years after building our own communitywide fiber network. We can help other communities do the same with these available services:

- **Marketing and Product Development:** Design, price and marketing products for maximum ROI through our market research, brand positioning and product design services.
- **Technical Support:** Our call center experts know the technology and have more than 10 years of experience teaching customers how to use it.
- **Fi Hub Dashboard:** Direct technical support easily and efficiently in real time. Listen to calls, open tickets, see metrics and more.
- **Alarm Monitoring:** Convenient 24/7 alarm monitoring from technical experts in our Tier-3 Network Operations Center.
- **Direct Internet Access (DIA):** Reliable and affordable DIA in symmetrical speeds of 10G, 20G or more through dedicated connections.
- **Smart Grid Consulting:** Amplify the capabilities, reliability and efficiency of power distribution systems while employing new technologies that maximize existing infrastructure.
- **Business Energy Tracker:** Give commercial and industrial customers access to real-time energy data to make demand load adjustments and save money.
- **Video Consulting:** Offer customers the right video solution, whether that includes joining NCTC or providing cord-cutting options.
- **Fi Ticketing:** Improve the customer experience with real-time data that tracks issues for quick resolution.

For more information, visit <https://epb.com/broadbandsolutions>

ESPI CORP.

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Customers: Telcos, cable TV, municipalities, electric co-ops
Products/Services: Passives – outside plant; customer-premises equipment

Introducing the Rack Mount Mega Titan – 48V UPS! Designed for 19-inch rack mount installations. The Rack Mount Mega TITAN provides a continuous 48V of UPS power including ONT dry contact alarms placed on a CAT-5 connection for easy field termination. Our field-proven battery management system ensures long life and reliable power in harsh environments.



FINLEY ENGINEERING COMPANY, INC.

104 East 11th Street
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Contact: Andy Heins



Customers: Telcos, cable TV, municipalities, electric co-ops
Products/Services: Passives – outside plant; passives – inside plant; other managed services; planning, design or construction; optical fiber and cable

Need to find the optimal way to bring high-speed broadband to your community, constituents, or customers? Slow or no broadband access puts rural communities at risk as economic development stalls. Finley works with you, starting with the initial feasibility study and funding application, through to the completion of your project. After 70 years and hundreds of implementations, we've seen just about everything, and have crafted the right solutions for even the toughest deployment challenges. Let us be your trusted partner from beginning to end.

GIGABITNOW

2842 Interurban Ave. S.
Seattle, WA 98168
P: 866-748-8066
W: www.gigabitnow.com
Contact: Dan Sivils



Customers: MDUs/PCOs, hospitality, municipalities
Products/Services: Structured wiring; other managed services; planning, design or construction; optical fiber and cable

GigabitNow offers communities of all sizes fast, reliable, affordable fiber internet without bandwidth caps and free from privacy worries or service constraints. Offering customized solutions for the development, construction, operations, support and delivery of gigabit fiber internet networks, GigabitNow focuses on providing the very best internet experience and genuine customer support to every customer. Builder-operator of multiple FTTH community networks, GigabitNow concentrates on providing gigabit-class networks and services to unserved and underserved municipalities, multi-tenant buildings and private communities. GigabitNow delivers solutions that match the uniqueness of U.S. communities, large and small, working alongside community leaders and providing out-of-the-box approaches and fiber network solutions that fit the needs of community residents and businesses.

NETWORK CONNEX

5101 Thatcher Road
Downers Grove, IL 60515
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Contact: Greg Spraetz



Customers: MDUs/PCOs, telcos, cable TV, hospitality, municipalities, electric co-ops, data centers, enterprises, wireless service providers

Products/Services: Structured wiring; other managed services; planning, design or construction; optical fiber and cable

Network Connex leverages the expertise of Advantage Engineers, CCSI Networks, Fairhaven Integration Services, VERTICOM, and NTI to provide best-in-class digital infrastructure services for FTTH and FTTx deployments. With a full range of robust capabilities, deep market presence in all major U.S. markets, and seasoned professionals in all ranks, Network Connex brings high-speed broadband services directly to your community. Our project approach and many years of experience across design, engineering, and construction, along with fiber testing, splicing, and placement, provide our customers with peace of mind in

achieving a smarter and sustainable fiber optics deployment in support of 5G and beyond. Available 24/7/365, Network Connex's team of communications infrastructure specialists are experts in the complexities of fiber system design and proper installation to support any FTTH/FTTx project lifecycle from beginning to end – while following the highest safety standards. Visit us at www.networkconnex.com to learn more.

OFS

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Customers: MDUs/PCOs, telcos, cable TV, hospitality, municipalities, electric co-ops

Products/Services: Optical fiber and cable

InvisiLight® Solutions – Fiber to the Unit

The pandemic put a magnifying glass on the role that high-speed internet access plays in American life. In a time of social distancing, people need broadband to work from home, access health care services, apply for public assistance, order groceries or prescriptions – and connect with educators. The InvisiLight MDU, ILU, Drop, and Façade Solutions are a fast and easy way to bring fiber to the living unit. Virtually invisible to the eye, InvisiLight Solutions are widely accepted by building owners and tenants to provide the fiber connectivity needed for the new way of living and learning created by the pandemic.



POSITRON ACCESS SOLUTIONS CORP.

5101 Buchan Street, Suite 220
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Customers: MDUs/PCOs, telcos, cable TV, hospitality, municipalities, MTU/SFU home clusters

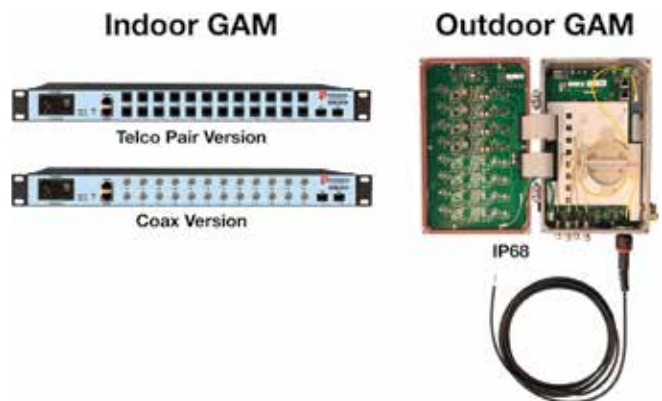
Products/Services: Active electronics – wireline; passives – outside plant; customer-premises equipment



Positron's G.hn Access Multiplexer (GAM) extends gigabit fiber or FWA services to each subscriber in MDUs/MTUs over the existing in-building telco pairs or coax infrastructure. The GAM installs in hours with no construction disruption with an all-in cost less than 25 percent of the cost of rewiring. This fully featured product has dynamic bandwidth allocation, ensuring gigabit in both downstream and upstream directions. The GAM integrates with leading OLT vendors and operates like an ONT with multiple gigabit ethernet ports.

Positron's Virtuoso is the perfect platform for cloud-based centralized management of MDUs served with the GAM. The GAM is available in indoor and outdoor telco pair and coax versions.

The solution is in service at major operators (telcos and cablecos), large hotel chains, ISPs, and communities. Reach out to sales@positronaccess.com to learn more about our free trial program.



PLP (PREFORMED LINE PRODUCTS)

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Customers: MDUs/

PCOs, telcos, cable TV,
municipalities, electric co-ops

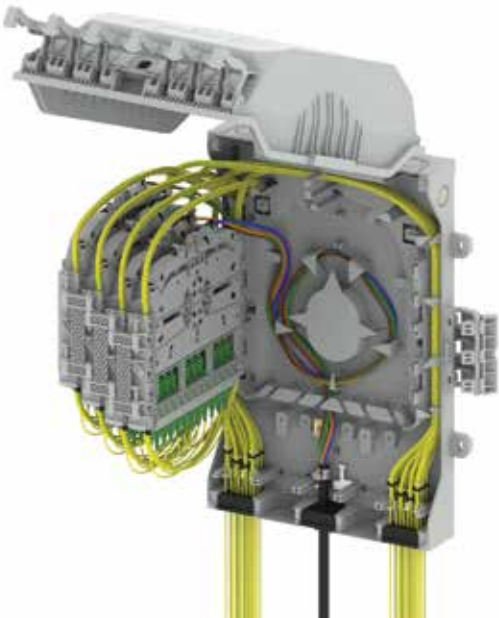
Products/Services: Passives – outside plant; passives – inside plant

COYOTE® DEN Closures

PLP's COYOTE DEN closure family is ideal for multiple-dwelling units (MDUs), fiber distribution points, or outdoor pole-mounted applications. The line offers three sizes to meet a wide range of splice and connectivity applications. Hinged splice trays allow easy access to underlying slack storage and quick drop cable additions. Multiple cable entries located at the top and bottom of the units allow for flexible cable entry. The grommets are universal across all three sizes and offer a cable diameter range of 0.07 inch to 0.51 inch as well as flat drop cables. Hinged covers with an integrated over-molded cover and robust latch system create an IP-65 seal and allow for quick reentry. A field-installable cover lock keeps this distribution point safe from tampering.

Features and benefits:

- Robust latch system and integrated over-molded cover provides quick re-entry into the closure
- Flexible grommet technology supports a wide range of flat and round cable profiles



- Multiple tray designs support mass fusion splicing, single fusion splicing, or splicing and connectivity
- Internal organizers manage buffer tube or ribbon
- Integrated mounting locations make attachment to the wall quick and easy
- Designed and tested to IP-65 Rated Requirements

QUANTUM FIBER

100 Century Link Dr.
Monroe, LA 71203
Contact: Katie Cooper
W: Q.com/ConnectedCommunities



Customers: MDUs/PCOs

Products/Services: Internet and video services/programming

Fiber internet for multifamily communities: With Quantum Fiber, builders, developers, and property owners can count on our expert team for tailored technology solutions for their existing properties and ground-up construction projects. Working with us, you've got a partner for the long-haul.

Wall-to-wall and curb-to-couch internet coverage:

Our premier Instant Internet and Instant Wi-Fi solutions are designed to meet the changing needs of your residents and property. Both feature pre-installed equipment and wiring, plus always-on internet – to make setup for your residents even faster.

Instant Internet

- Instant, move-in day activation – no installation or additional equipment required.
- Up to 940 Mbps symmetrical speed – unlimited data.*
- Designed for any type of residential property or community – from high-rise apartments to single-family homes.

Instant Wi-Fi

- Instant, move-in day activation – no installation or additional equipment required.

**Tier 1 internet
2023 brand to watch.**



- Up to 940 Mbps symmetrical speed – unlimited data.*
- Built for multifamily properties, Instant Wi-Fi gives residents personal, secure, propertywide Wi-Fi.
- Ideal for HOAs and owners of mid-rise and high-rise multifamily communities.

*Speed may not be available in your area.

Let's connect to build a customized solution for your property. [Q.com/connectedcommunities](https://www.q.com/connectedcommunities)

INNOVATIVE, NEW AND OUTSTANDING TECHNOLOGIES AND SERVICES FROM LEADING BROADBAND INDUSTRY PLAYERS

COMPANY	CUSTOMERS						PRODUCTS AND SERVICES																
	MDUS/PCOS	TELCOS	CABLE TV	HOSPITALITY	MUNICIPALITIES	ELECTRIC CO-OPS	ACTIVE ELECTRONICS – WIRELINE	ACTIVE ELECTRONICS – WIRELESS	VIDEO HEADENDS AND RELATED EQUIPMENT	PASSIVES – OUTSIDE PLANT	PASSIVES – INSIDE PLANT	CUSTOMER-PREMISES EQUIPMENT	STRUCTURED WIRING	PASSIVE OPTICAL LAN	TEST EQUIPMENT	INTERNET AND VIDEO SERVICES / PROGRAMMING	OTHER MANAGED SERVICES	PLANNING, DESIGN OR CONSTRUCTION	TRAINING	BACK-OFFICE SOFTWARE	CUSTOMER-FACING SOFTWARE	OPTICAL FIBER AND CABLE	
Adtran	✓	✓			✓	✓	✓	✓			✓	✓					✓	✓	✓		✓		
CDG – Communications Data Group	✓	✓	✓		✓																✓	✓	
Charles Industries, LLC		✓	✓		✓		✓	✓			✓			✓			✓	✓		✓			✓
Clearfield	✓	✓	✓	✓	✓	✓				✓	✓	✓		✓					✓				✓
Crowntech Photonics Ltd. LLC	✓	✓	✓		✓					✓	✓			✓									
EPB Broadband Solutions		✓	✓		✓	✓											✓	✓	✓				
ESPi Corp.		✓	✓		✓	✓				✓		✓											
Finley Engineering Company, Inc.		✓	✓		✓	✓				✓	✓						✓	✓					✓
GigabitNow	✓			✓	✓								✓				✓	✓					✓
Network Connex	✓	✓	✓	✓	✓	✓							✓				✓	✓					✓
OFS	✓	✓	✓	✓	✓	✓																	✓
Positron Access Solutions Corp	✓	✓	✓	✓	✓		✓			✓		✓											
PLP (Preformed Line Products)	✓	✓	✓		✓	✓				✓	✓												
Quantum Fiber	✓															✓							
Radiant Communications Corp			✓		✓			✓			✓					✓							
xfinity Communities	✓															✓	✓						✓

RADIANT COMMUNICATIONS CORP.

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Customers: Cable TV, municipalities

Products/Services: Video headends and related equipment; customer-premises equipment; internet and video services/programming

MDU and senior property owners/communities can take control of their video content channels and bulletin boards and create their own ads for their residents without ISP/cable companies' help by using Radiant Communications' products.



XFINITY COMMUNITIES

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Contact: Lauren King



Customers: MDUs/PCOs

Products/Services: Internet and video services/programming; other managed services; optical fiber and cable

At Xfinity Communities, we're dedicated to delivering the most connected, seamless experience for both you and your residents. What does that look like? It's a powerful and secure connection throughout their home. It's entertainment with all their favorite streaming apps, all in one place. In times where working from home has become the norm, that level of connection makes all the difference. We make it easier than ever to stay connected – with instant access to Wi-Fi and 24/7 customer service, so you can manage fewer tech visits and touchpoints. Xfinity Communities is here to deliver the powerful connection your residents need.

Connected today. Powered for the future. 🌟

