

NOT Your Grandfather's Television Service

***How IP Technologies Are Impacting Customer
Expectations from Service Providers***

A photograph of a home theater room with rows of beige seats facing a projector screen. The screen displays the text 'Is YOUR Network Ready?' in a blue, stylized font. The room has dark wood paneling and recessed ceiling lights.

***Is YOUR
Network
Ready?***

INSIDE:

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- **Carrier Ethernet Access for the Future**
- **Deploying VOIP and Avoiding CAPEX**
- **Adding Video Service Warrants New CO Considerations**

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Feature Article: The Wise Guy

The Wise Guy

Taken a Look at the Future Lately? Walker's Director of Engineering, Rodney Wise, talks about the advancements of IPTV.



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Editor's Letter

The Skinny Wire is your source for the latest telecom products, solutions, and trends. Walker and Associates makes it a priority to stay abreast of the latest products and trends in the telecommunications industry, in order to provide customers with the best competitive solutions. In this issue of the Skinny Wire you will find useful information pertaining to multiple technologies including IPTV, IP Video, Voice over IP, Carrier Ethernet, SONET, timing solutions, connectivity products, and many more.

Also, many of the top manufacturers in the telecom industry have written editorials relating to the hottest trends of 2007-2008, and you can find them all in this issue of the Skinny Wire.

Additionally, if you're interested in learning more about Walker's associates and our community involvement, check out the Walker news section for more details. There you will discover how Walker and Associates supports a local high school, and how a few of our associates have accomplished great milestones.

Please enjoy this issue of the Skinny Wire. Feel free to contact me with any questions or feedback relating to this Walker publication. Expect our next issue in early 2008.

Jennifer Beck

jennifer.beck@walkerfirst.com

Taken a Look at the Future Lately?

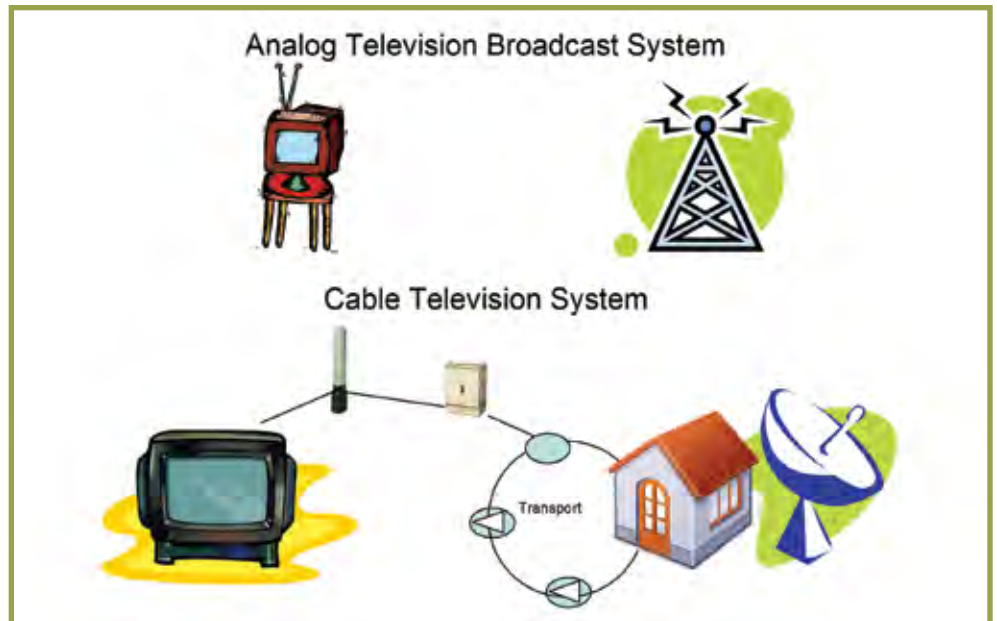
The Wise Guy*



Maybe I'm showing my age, but the word "television" makes me think of an old Quasar 19" black and white or the latest 25 inch "Color" Console. Also, Monty Hall building the tension as the contestant decides which door to choose. However, the term "TV" doesn't seem as dated. It can tag along with just about any current buzz word - LCD TV, Plasma TV, HD TV, Reality TV, and IP TV. Since most viewing appliances are just monitors these days, maybe TV is on the endangered terms list as well. Perhaps, but we will continue to enjoy taking time out of a busy week to view fascinating programs on some appliance.

The simplified illustrations to the right give an idea of the level of complexity and number of components used in past systems to deliver programming.

The question is do consumers really care how they receive their TV programming? I venture the answer is yes and no. As long as the consumer receives



appropriate quality, flexibility, and features from whatever means available, the answer is no. When rates are considered, the answer is yes. Unless there is unbundling of current cable networks

going on someplace, telecommunication companies enter the realm of competition with IPTV over DSL and PON.

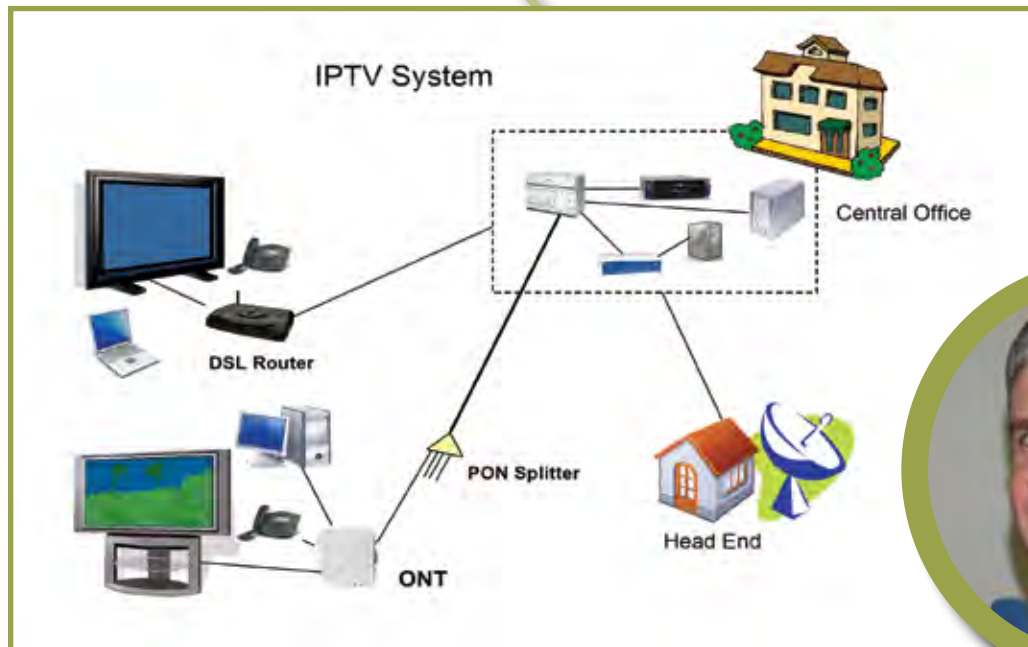
IPTV service is delivering any rate-based programming over a private IP

network to an IP capable appliance. Similar to a traditional cable network, the service provider is responsible for the programming and applications delivered and the quality of service in the IPTV network. As the deployment of broadband services such as DSL and PON has increased to provide the necessary path to the home, the interest in IPTV delivery has increased as well. The design and cost improvements of IP appliances such as routers, switches and set-top boxes also help to improve the IPTV business case. Now, we have a pipe to deliver the service and equipment to provide the service. These elements help drive interest in bundling IPTV services on the IP pipe to maximize revenue and provide one-stop shopping.

A typical system used for delivering IPTV is illustrated below. In this network, you can see the use of PON and DSL delivering service to the consumer, which has been doing so for a number of years. The interesting part is that the telecom company providing the service owns the

about bandwidth to deliver video. Maybe we should forget about FTTH and go straight to FTTA, Fiber to the Appliance. A telecom closet in every house equipped with a router and fiber patch panel. Now we are moving ahead.

“ ... do consumers really care how they receive their TV programming?”



entire network. Controlling this “private” IP network to prioritize video traffic to prevent delay or fragmented pictures allows a quality of service consumers expect on their TV sets.

The pains we are going through in the telecommunications industry to provide video, makes me realize what a beautiful thing “cable” must have been almost sixty years ago. Now we are trying to get every bit out of our twisted pair, deploying fiber to the home and we are still concerned



***The WISE GUY**
 - As Director of Engineering Services, Rodney Wise confronts a variety of technical questions on a daily basis. His broad background provides him a real-world perspective of challenges and opportunities telecom engineers and project planners face in the field. This experience, along with continual training from the manufacturing community and a staff of equally talented Sales Engineers provide customers with a wealth of pre and post-sales engineering support. The Wise Guy is a regular feature in The Skinny Wire and on our website.

Choosing A Gateway to VoIP

By AudioCodes

AudioCodes provides innovative, reliable and cost-effective Voice over Packet technology and Voice Network products to OEMs, network equipment providers and system integrators world wide. AudioCodes offers its customers and partners a diverse range of flexible, comprehensive media gateway and media processing technologies, based on VoIPerfect™ – AudioCodes' underlying, best-of-breed, core media gateway architecture. The company is a market leader in voice compression technology and is a key originator of the ITU G.723.1 standard for the emerging Voice over IP market. AudioCodes' international headquarters and R&D facilities are located in Israel, with U.S. headquarters in San Jose, California.

AudioCodes award winning Media Gateways allow enterprise customers and carriers alike to harvest the full benefits of a VoIP communication

network, while protecting their existing investment through the support of connection to legacy telecommunications systems. AudioCodes Media Gateways enable PSTN network access, while creating a smooth-paced migration towards next generation network architecture. They support digital and analog trunks in separate platforms, or mixed configurations on a single platform. AudioCodes Media Gateways have scored the highest re-

sults on independent voice quality tests ahead of all competitive vendors.

AudioCodes is a multifaceted VoIP supplier with product lines that include Session Border Controllers, Median Servers, Media Gateways, embedded VoIP DSP technologies, and Advanced Messaging applications. Please see more about AudioCodes and our award winning line of VoIP technologies at www.audiocodes.com.



AudioCodes Mediant 5000 VoIP Media Gateway



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Walker and Associates' expert integration makes it easy for you to incorporate new products into your network. With Walker's services, transition can be smooth even if you don't have the staff or the time to test your new products. We'll rack and stack your system, test it, and prepare it for use, so when it arrives on your site, you'll know it's ready and meets your quality standards.

Installation Services

EFI&T: With full engineering services, Walker will get your network operational. We'll bring your new products right to your site, install them, and make sure

they work at an optimum level. Expert installation is an integral part of our complete EF&I service.

Logistics Services

Custom Network Deployment Kits: Walker can save you time and money with custom kitting services. As an international distributor, we represent more than 200 different manufacturers, giving us the ability to combine multiple parts from numerous manufacturers under one part number, customized for you. Your custom kit serves as one line item on a purchase order, so you'll never have to waste time and resources selecting parts.

Distribution Services

With a vast range of services and products, Walker is the ultimate one-stop shopping point for your network needs. We maintain a thorough and efficient distribution system that makes it simple for you to purchase and install the products you need. We strive to hold stocking positions on the most commonly required equipment of our primary and featured manufacturers to allow you just in time delivery.

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Carrier Ethernet Access for the Future

By ADTRAN

Ethernet is quickly becoming the access technology of choice for service provider networks. With its worldwide use, simplicity, and interoperability, Ethernet can reduce the implementation and maintenance costs of networks far beyond any other available technology. That is why Ethernet has become an important component of ADTRAN access systems.

Services Differentiation. ADTRAN has incorporated Ethernet throughout our access system solutions, from Total Access 5000 MSAPs that deliver Ethernet in the First Mile over Copper (EoC) and Ethernet over TDM (EoTDM) to Resilient Packet Ring (RPR) platforms such as the E-Series designed for Metro-Ethernet services. Ethernet scales easily to Gigabit speeds, making it the perfect choice for converging voice, data, and video applications in turn creating new marketable and sustainable services.

Operational Efficiencies. Ethernet as a WAN technology poses concerns for the

service provider – security, traceability, timing for private line services, and management just to name a few. With over 20 years experience in the telecommunications industry, ADTRAN understands the operational concerns of the service provider. Combining ADTRAN's experience and technical depth with the best minds in the industry has resulted in a full line of Ethernet solutions that fully address network demands and ensure a sustainable business model.

Network Optimization. Historically, T1/E1 circuits have been the solution for symmetrical business service delivery, carrying everything from traditional TDM voice and Frame Relay to IP. However, as business customers are faced with newer, higher speed applications, the need for more efficient and economical Ethernet service is growing. In an ideal setting, carriers would run fiber to every business and greatly simplify Ethernet deployment but that is not practical.

A Better Solution. ADTRAN's Total Access 5000 offers a complete solution for

migrating the carrier's network infrastructure to support the delivery of symmetrical Ethernet services. The Total Access 5000 supports standards based copper pair bonding of xDSL loops for direct Ethernet over copper service delivery.

End to End Solutions. Leveraging a complete end-to-end solution with the ADTRAN Total Access 800 series of customer premise equipment, up to 8 pairs can be bonded together to deliver multi-megabit rates. The Total Access 5000 also offers an innovative approach to delivering Ethernet services over the existing TDM business service delivery network. Using Ethernet in the First Mile (EFM) bonding over traditional DS1/E1s, ADTRAN's FastBreak approach supports Ethernet over TDM. By equipping EFM end-points (Total Access 5000 aggregator and the Total Access 800 CPE), traditional TDM business service delivery networks can support the ubiquitous deployment of Ethernet across the entire business delivery infrastructure, providing instant footprint efficiently and economically.

Tellabs Cablespan 2300 Hybrid Fiber Coax Solution

By Tellabs

The Tellabs 2300 Telephony Distribution System's Host Digital Terminal (HDT) terminates T1 facilities using the industry standard GR-303 protocol for voice traffic. Transceivers within the HDT provide system management and traffic bandwidth to the Tellabs 2300 system's Remote Service Units (RSUs) that provide the voice interfaces on the customer premises.

The Tellabs 2300 telephony distribution system series includes:

- The Tellabs 2330 Remote Indoor Service Unit (RiSU) delivers integrated telephony and cable television to the home or small business over existing hybrid fiber-coax (HFC) networks.

- The Tellabs 2340 Remote Service Unit (RSU) delivers integrated primary-line telephony and cable television services to the home or small business over existing two-way hybrid fiber-coax (HFC) networks.

Customer Benefits:

- Grows revenue and rapidly achieves positive cash flow by providing life line

telephony service over an existing HFC network coupled with continuous cost improvements in headend and CPE equipment. Arms MSOs with a competitive service offering to gain market share.

- Highly cost-effective to deploy with scalable "pay as you grow" architecture that enables MSOs to align capital expenses with revenue streams.

- Reduce customer care, maintenance and technician costs to minimize operating expenses with the Tellabs 2300 Telephony Distribution System and the Tellabs 2390 Element Management System that work together provide a myriad of features.

Product Features:

- Compact, modular, scalable architecture. Start as small as a one-shelf, 30-customer system and incrementally expand to four shelves and 3,960 customers per HDT as the subscriber base grows.

- The fault management, traffic statistic collection, surveillance, and remote diagnostic capabilities of the Tellabs 2390 EMS enable the MSO to proactively man-

age the network from a centralized location.

- Multipoint Radio Frequency (MRF) sharing provides RF path protection and reduces call blocking to protect from loss of downstream or upstream and increase the Quality of Service.

- Best in Class RSU diagnostics help to remotely troubleshoot issues, resulting in fewer truck rolls and lower operating expenses.

Walker and Associates is the exclusive stocking distributor of the 2300 Cablespan RSU's.

Walker will be stocking the following parts:

85.2302-2c4n7

85.2302-4c4n7

85.2303-2n4ndc-x



Deploying Ethernet Networks

By ADTRAN

As Triple Play, 1xEV-DO, PON, High Speed Downlink Packet Access (HSDPA), Next Generation Networking (NGN) and IP Multimedia Subsystems (IMS) are all driving a transformation to IP. The access network that resides between IP edge and IP core must keep IP pace or become a quality of service bottleneck and the main component of growing operational expenditure.

Managing Two Separate Networks

Service providers are advancing their networks in an effort to deliver new revenue streams. New sellable services are often Ethernet delivered requiring network build outs. As mobile and fixed service operators invest in these new packet networks they must continue to support non-Ethernet or TDM services such as traditional phone and fax services. These legacy technologies represent an important source of revenue for carriers that must continue to be served until equitable IP-based replacements are deployed. During this transition period an operator concern is the operation and maintenance of two disparate networks - one IP and the other TDM-based. A carrier must maintain and support a mix of new and existing service offerings, including services previously delivered over legacy TDM infrastructures.

Preserving Quality of Service over Best Effort IP Networks

The ability to support both new and existing services on a single network infrastructure allows a service provider to eliminate or cap spending directed at existing infrastructures and focus budgets on future business— of course, without negatively impacting current customer SLAs and revenues. Circuit emulation services exist that deliver TDM service over

packet-switched networks (CESoPSN). These solutions, often called pseudowires, allow network operators to effectively grow new IP services as well as support revenue streams from legacy services. In effect pseudowire creates a circuit within the packet network providing an environment for voice service prioritization and TDM timing preservation. Carrier class versions of these solutions provide the ability to manage packet network performance, namely packet delay and variation of delay metrics as well as fault isolation tools such as loopbacks.

Pseudowire for Any Size of Network or Service

ADTRAN offers a cost effective, scalable solution regardless of network size or Ethernet penetration. ADTRAN delivers a low profile, high density gateway that can be deployed point to point providing the operator a cost-effective solution for initial deployments. This same solution can then scale to support large deployments with a point to multi-point option using a pseudowire emulation edge to edge module (PWE3M) card upgrade within the ADTRAN OPTI-6100 multi-service platform to deliver scale and flexible interfacing into the core digital cross-connect system (DCS).

ADTRAN Pseudowire Solutions Extend the Value of Ethernet Access

ADTRAN Pseudowire solutions enable the consolidation of service delivery onto a single network. Operational costs can be significantly reduced by retiring expensive TDM leased lines and consolidating broadband and TDM voice services onto a single Ethernet network. In any cases, the entire solution can offer a six month return on investment (ROI).

Stefanie Leak Graduates from Troy University

By Anna Flippen

Stefanie Leak, of Walker and Associates, graduated from Troy University-Atlantic Region June 7, 2007 at the renowned Harrison Opera House in Downtown Norfolk, VA. She received her Masters degree in Public Administration with a Concentration in Government Contracting.

Troy University-Atlantic Region holds a special place in Stefanie's heart. Her experience at Troy left her with strong patriotism and pride in the United States Military. Troy was designed primarily for graduate degrees for academic professionals actively serving in the United States Military. Many of Stefanie's classmates were active personnel serving the US in Iraq or Afghanistan. It was amazing to her how these soldiers could take the time

and concentrate on academics in the midst of such chaos and fear. Stefanie stated "during the commencement emotions erupted as all of the men and women who risked their lives for the United States of America received their degrees. Words will never explain the gratitude I feel to all our military in providing me with a safe environment in which to pursue my graduate studies. I applaud their continued efforts and pray for God's speed during these difficult times." Walker is fortunate to have someone with Stefanie's perseverance and positive attitude.



LoopStar® SONET Access System

Cell Site Backhaul Aggregation and Transport

By ADC

One of the greatest challenges facing mobile operators today is reducing the cost of the backhaul portion of their network, while increasing reliability and revenue-generating opportunities. Furthermore, mobile operators want to be certain that the backhaul transport solution is capable of addressing traditional 1 and 2G-based Radio Access Networks (RANs) as well as 3G-based RANs.

Traditionally, the backhaul portion of the mobile wireless network has consisted largely of multiple, leased T1 lines or privately owned microwave connections that backhaul traffic from base-station transceiver subsystems (BTS) to mobile switching centers (MSCs). These solutions are expensive and not easily scalable.

With existing and new traffic requirements at a given cell site, multiple point-to-point T1 connections are required for transporting existing services, and a Gigabit Ethernet (or optical 100BaseT) or DS-3 connection are required to transport data from each 2.5G/3G site. Consolidating this traffic onto a common optical transport backbone can save

mobile operators as much as 50 percent in backhaul transport costs. By owning the network and aggregating the traffic, the mobile operator hands off a single connection to the MSC and a single connection to the Internet instead of multiple, costly, point-to-point connections. For mobile operators, ADC's LoopStar SONET solution provides the perfect combination of service flexibility, network reliability, and cost-savings to address both current and future cell site backhaul needs.

Service Flexibility

In order to efficiently add transport services, a LoopStar 800 can aggregate traffic from existing DS0 DACS and provide Ethernet connectivity for new, data-based services.

Network Reliability

The LoopStar 800's SONET interfaces provide 1+1 LAPS or UPSR protection. In addition, tributary protection is provided for TDM interfaces. For a DS1 card, it is 1:n (n=1, 2, or 3) and for a DS3 card, it is 1:n (n=1 or 2).

Aggregation

The LoopStar 800 and 1600 provide capabilities to effectively mux and groom traffic at key aggregation points within the mobile operator's network.

Cost-Savings

The LoopStar 800's ability to efficiently aggregate T1s as well as data traffic can significantly reduce the mobile operators' network expense.

Summary

The LoopStar SONET solution enables mobile operators to significantly reduce their costs and operational concerns surrounding cell site backhaul. The LoopStar 800 accomplishes this through efficient aggregation and transport of legacy TDM services and 2.5/3G data services, which eliminates the need for dedicated, point-to-point connections to each cell site. The LoopStar 800's cost effectiveness and ease of management make it ideal for mobile operators who are considering owning the SONET backhaul network and for carriers who provide backhaul services to mobile operators.

Work on 2008 Events Underway

By Ashley Jobe



Randy Turner, Marketing Communications Manager for Walker and Associates, will be serving on the expo committees for the NTCA 2008 Annual Conference Expo, and the 2008 RCA Annual

Conference Expo. The committees are comprised of volunteers from a variety of exhibitors and association representatives, and work together to increase the effectiveness of the expo events for both attendees and exhibitors.

The NTCA 2008 Annual Conference and Expo is scheduled for February 11 - 13 in New Orleans, LA. This annual event attracts key decision makers from independent telephone companies across the country, and boasts strong educational

programming in addition to the expo.

The Rural Cellular Association's Annual Convention and Expo will be at The Rio in Las Vegas April 27 - 30, 2008. RCA provides multiple annual opportunities for its members to learn more about the industry and network with other members. The annual convention and expo is the largest event for RCA, which represents the interests of wireless carriers with fewer than 500,000 subscribers.

Randy Turner has worked for Walker and Associates since 1995. He is responsible for external marketing programs and events, including trade shows, printed collateral, the company's websites, managing www.walkerfirst.com and www.skinnywire.net, as well as print and electronic advertising programs.

In addition, Randy is an experienced presenter and trainer, specializing in sales, customer service and professional development topics. He is a licensed sales

trainer, and has extensive experience on a variety of customer service themes. The local Chamber of Commerce utilizes him annually for a change management workshop, which he has also presented at the Minnesota Telecom Alliance Annual Convention. He can be reached at randy.turner@walkerfirst.com.

"Well-informed people know it is impossible to transmit the voice over wires. Even if it were, it would be of no practical value."

- Boston Post, 1865



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Established in 1949, Newton Instrument Company is a leading manufacturer of Telecommunications Structural Components. We provide a product line that covers all structural and support needs from the smallest closet LAN application to the largest seismic Zone 4 central office for both copper and fiber. Our Zone 4 racks and cabinets are tested and certified by independent labs. From product design to office layout, our Customer Support Team is ready to help you with your structural needs.

Made Right When You Need It, Driven To Be Better!

Walker and Associates Supports Local High School's Academic Lettering Program

By Anna Flippen



Walker and Associates is a proud sponsor of the Academic Lettering Program for North Davidson High School located adjacent to corporate headquarters. To receive an academic letter, students must achieve a grade point average of 3.46 or higher. Students are eligible for the award recognition at the end of their third, fifth, and seventh semesters of high school.

This year's awards ceremony was hosted in the school auditorium on Sunday, May 20th. There was a great turn out of proud parents and faculty, approximately 350, to watch the students receive their individual letters. There were approximately 140 students who received academic letters in the mid-day ceremony, and 51 students who were recognized with community service awards.

In attendance and guest speaker from Walker and Associates was Jane Brightwell, VP of Business Development. "This is your day to celebrate" said Ms. Brightwell to the students for a job well done in earning a letter for their academic accomplishments. Jane Brightwell extended congratulations on behalf of Walker and Associates to the students of North Davidson High School and their friends and family.

The Academic Lettering Program is an event hosted by Partners in Education, an educational support organization comprised of parents, educators, students, and the business community. Their focus is on enriching the lives of students in their communities through promoting, recognizing and rewarding academic achievement and student volunteerism. Walker is an active financial supporter of Partners in Education, specifically with an annual contribution towards the academic lettering program.

Rewarding Excellence in the Local Community

By Jennifer Beck



It has become an exciting annual tradition at Walker and Associates to present a scholarship to a deserving high school senior within the surrounding communities of Walker's headquarters in Welcome, North Carolina. The scholarship, titled "Chris Walker Leadership and Service Scholarship" was created in memory of Walker's founder Chris Walker, who was a man of great vision, service, and leadership.

The scholarship opportunity was extended to all local high schools with the requirement that students submit a list of their accomplishments, honors/awards, clubs/activities, the college they will be attending, their GPA, an essay, and two letters of reference.

This year's application also required the students to compose a two to four page essay relating to at least two of the "Seven Habits of Highly Effective People" (by Steven Covey), in relation to the student's current experience,

as well as future goals in leadership and service.

The 2007 Chris Walker Leadership and Service Scholarship was presented to **Charles Franklin McDowell IV** from North Davidson Senior High School. Charles is a student who stood out above others. He has earned a great deal of academic achievements, has several years of work experience, participated in multiple sports and school clubs/organizations, as well as spent numerous hours as a service volunteer.

Charles McDowell, like Walker's founder, is also a young man of great vision, service, and leadership. At the early age of 12 Charles had a vision of owning his own service company. At the age of 17 he now runs a successful landscaping business with eleven employees.

Mark Walker, President of Walker and Associates, presented the scholarship award to Charles McDowell at the North Davidson Senior High School Awards Ceremony. Charles and his family were surprised and overwhelmingly appreciative of the scholarship.



Z H O N E

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FlexDSX® and RZX-3 Digital Signal Cross Connect Systems

ADC's FlexDSX and RZX-3 systems allow technicians to patch, terminate and rearrange DS1 and DS3 circuits. FlexDSX's modular chassis accommodate four-port cards with dual monitor ports that enable bi-directional monitoring. The rear cross-connecting RZX-3 features mid-size jacks and BNC connectors, and accommodates 24, 32, or 36 circuits per chassis in 19" or 23" racks.



Megabit Modems

Megabit Modems provide a wide range of LAN extension solutions for campus applications such as shopping malls, office complexes or apartment complexes. In addition, Megabit Modems offer the ultimate in versatility and compatibility, featuring full rate ADSL, SDSL and G.SHDSL support.



LoopStar® SONET Access and Transport Solutions

ADC's LoopStar SONET Access and Transport product family allows service providers to cost effectively provide TDM and Ethernet business services to enterprise customers from a single platform. These solutions include the LoopStar 800 Next-Generation SONET Access System, LoopStar 1600 SONET Multi-Service Transmission Platform, and LoopStar 810 CLE SONET Access System, designed specifically for Customer-Located Equipment (CLE) applications.



LoopStar® Next Generation Ethernet Access and Transport Solutions

The LoopStar 700 Ethernet product family allows carriers and service providers to cost-effectively aggregate, deploy and manage Ethernet and TDM services for a broad range of customer applications. This portfolio of Ethernet multi-service access solutions is optimized for whatever type of network facility is available or is the most cost-effective solution for a particular customer application.

The foundation on which voice, video and data services exist is the key to network effectiveness. ADC provides network infrastructure products that are innovative, flexible and cost-effective. Walker and Associates carries the complete line of ADC's field-proven solutions. Supercharge your network today. Visit www.walkerfirst.com or call 800.WALKER.1



of ADC's industry-leading connectivity products.

OmniReach™ Access Terminals and Distribution Hubs

ADC's Access Terminals and Distribution Hubs provide a robust, user-friendly, and cost-effective platform for delivering fiber optic service drops in FTTP deployments. For both single-family homes, as well as multiple dwelling units, ADC's OmniReach solutions provide physical protection, long-life reliability, superior fiber management and an aesthetically appealing appearance.



OmniReach™ Multi-Port Service Terminal

The OmniReach Multi-Port Service Terminal (MST) incorporates hardened connector technology that is designed to withstand the rugged outside plant environment. These uniquely designed hardened connectors are factory-terminated and environmentally sealed for use in drop cable deployments in optical access networks. The MST is available in 2, 4, 6, 8 and 12 port versions and can be mounted on a pole, pedestal, hand hole or strand.



TracerLight™ Connector Identification System

ADC's innovative TracerLight Connector Identification System offers a quick and accurate method of identifying the termination points of optical patch cords. TracerLight allows technicians to visually trace individual patch cords from one end to the other without pulling or affecting the patch cord. This dramatically minimizes the risk of taking the incorrect fiber out of service and improves system turnup speed and accuracy.



FiberGuide® Raceway Systems

As fiber densities continue to increase, so does the demand for increased cable management capacity and protection. FiberGuide raceway systems protect and route fiber throughout the facility. ADC is pleased to introduce the new 4x24 inch size, which is the unrivaled solution for the highest density applications.



The New Broadband Home Router Powerhouse.

Deliver the connected home vision with HDTV-capable bandwidth over fiber, copper, coax, or Ethernet.



IP Video Gateway
UltraLine™ Series3


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Tellabs 2300 INVENTORY ALLOCATION PROGRAM



Walker and Associates is proud to partner with Tellabs by serving as the sole stocking distributor for the 2300 CableSPAN Remote Service Units.

Walker's inventory position supports service providers who utilize the 2300 RSU's to broadcast telephony and video services.

Set up an inventory allocation program with Walker today to ensure stock is available for turning up service and supporting outages without the associated inventory carrying cost.



Walker is Actively Stocking:

2 Line RSU's 85.20302-2c4N7

4 Line RSU's 85.2302-4c4N7

RISU's 85.23032NDDC-X



Deploying VoIP and Avoiding CAPEX

By Carrier Access

When faced with a decision to migrate to voice over IP (VoIP), small and medium businesses have two choices. One is to go with an immediate conversion that means a total overhaul of their existing wiring infrastructure, an upgrade of LAN equipment and the purchase of expensive IP phones all of which, in the end, can cost thousands to tens of thousands of dollars. Not to mention the loss of depreciation on existing investment in their legacy telecommunications equipment.

The other option is for a company to go with a gradual migration to VoIP that creates a low cost entry vehicle, allowing them to migrate to hybrid or desktop solutions at a manageable pace. With this option, companies can start enjoying the benefits of converged access as a stand alone location or multi-site company with little or no upfront capital expenditure. In other words, is a 'forklift' conversion or a general migration to VoIP the right business decision?

Companies must ask themselves, "Is VoIP for me?" Not all companies are prepared for the commitment of time, money and productivity to completely convert to VoIP. It is especially painful if they discover later that they aren't prepared and are then stuck with a costly solution that doesn't meet their business needs.

Carrier Access can enable companies to make the decisions that are right for them. Whether it's a full implementation to VoIP over the course of time or just a partial migration, Carrier Access has the expertise and products to provide the correct solution for a company's business needs. The following issues highlight some of the values of the Carrier Access solution:

Performance: The Adit family of products has high performance network processors which guarantee packet performance regardless of loading or enabling or disabling features and functionality based on need.

Install and Configuration: The GUI configurator for the Adit family is exceptionally easy to use. Cut your install, configure and provision time in half.

High Availability: The Adit family of products is purposely built to provide the highest level of availability. They are built without fans or fuses, removing the two major causes of device failure in the field.

Graceful Migration to VoIP: The Adit family is perfect for easing companies into VoIP because it supports legacy telecommunications connectivity as well as IP devices. In addition, it has the performance and WAN interfaces to provide future scalability.

"All-in-One-Package" Powers Park Service Network

By Newmar

Newmar's Integrated Power Systems (IPS) supply primary DC power and battery back-up to numerous critical networks. A recent installation required high reliability 12 VDC for land mobile radio base stations for the National Parks Service in Utah.

The 2-way radio system consists of a network of base stations and repeaters. Due to the extreme remoteness of the areas, most sites operate on stand-alone solar power providing necessary AC power to the locations' buildings including visitor's centers and employee residences. For the locations with utility AC power, it is unreliable and very harsh on sensitive electronic equipment. Because of the rough conditions, the National Parks Service wanted to keep all of the sites' critical communication system's power similar, streamlined, and simple. Thus the Newmar IPS was chosen.

The Integrated Power System, model IPS-12-40, provides 12 VDC directly to the base station's Motorola radios and to the Daniel Electronic repeaters, which are also supplied with utility AC power.

Each site will also be configured with a bank of external batteries that will utilize the charging circuit of the IPS to provide extended battery back-up.

The unique multifunction "integrated" power supply is ideal for remote critical sites. The IPS contains a power supply and built-in batteries and also features, additional rear battery terminals, which in this case were utilized to tie in additional battery strings for longer ride through during AC power failure. The batteries are always 'in-line' with the load, thus there is no interruption from relays or transfer switches in the event of AC loss. Batteries are recharged when AC is restored. A manual battery disconnect switch allows internal or external battery service or replacement while the system is running. Also, it features an automatic low voltage disconnect to prevent damage to the powered equipment and to protect the batteries from permanent capacity reduction because of a low voltage input.

The Integrated Power Systems, which occupies only 2 RU (3.5") of vertical rack space, also features output



metering, LED status, and Form C failure alarm contacts. All are pre-wired and calibrated within the unit for plug-and-play operation. The rear plug-in terminals also make the wiring easy for an additional parallel rectifier input. Also, they feature numerous protection features such as AC input breaker, internal battery breaker, auto thermal shutdown/recovery, current-limiting, short-circuit and over-voltage protection, to guard sensitive electronic equipment from damage.

Models are also available for 24 and 48 VDC outputs in power ratings of 11 – 22 amps.

Newmar offers a broad range of DC power products with an earned reputation of high reliability and quality in powering wireless networks in Broadband, Microwave, Cellular, and Land Mobile applications.



FUJITSU

When Speed Matters To Your Customers



MicroMAX-SOC is a complete standalone base station, sharing the same system architecture as our tried-and-tested ASWipLL product line. The MicroMAX-SOC base station is highly modular in design and consists of two main components: the all outdoor Base Station Radios (BSR) and the indoor Base Station Distribution Unit (BSDU), or single channel Data Adaptor. Each base station site could contain up to 12 BSRs, depending on the amount of available spectrum. Each BSR is connected to the BSDU via a 100BaseT interface operating over a CAT5 cable which carries both data and power.

MicroMAX-SOC is designed to support lower density, rural broadband access, enterprise applications and DSL in-fill scenarios in both licensed and unlicensed bands.

One of the key features of the MicroMAX-SOC BSR is that it requires less than 28W power, making it ideally suited for line powering by using SHDSL lines thus enabling the economic delivery of broadband wireless services to communities beyond the reach of DSL.



The EasyST is a physically compact WiMAX CPE designed to be deployed alongside the end user's PC. With dimensions close to the size of two CD jewel cases, EasyST looks great when sitting on a desk or bookshelf.

The EasyST is designed to be installed by the end user, using a simple-to-use but sophisticated user interface to enable optimum positioning without connecting to the user's PC. This helps improve service availability and reliability while increasing service speed and reducing network load. Three different deployment models are supported: using the integral 7dBi antenna, using together with the optional Wi-Fi expansion (thus locating the EasyST by a window) or using with the stick-on-the-window external antenna. In all cases, a visual indication system informs the user when the optimum location for RF reception and transmission is achieved.

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By Telect

Choose Telect and you'll gain a quarter-century of expertise, product innovation and service, with solutions optimized for triple-play applications ranging from the central office to the outside plant. Only Telect offers a complete line of optical and copper connectivity products, power distribution panels, equipment racks, cabling and cable management systems. It's all available from one supplier, with highly competitive pricing and delivery.

Optical Connectivity, Patch Panels and Systems



Connectivity solutions for 21st century applications, with a wealth of components, panels and systems for connecting optical networks. Telect solutions ensure signal integrity, ease of installation, scalability for future growth and simple usability.

Copper Connectivity, Patch Panels and Systems



A pioneer in copper connectivity, with products that emphasize circuit density, cable management and usability, helping you build cost-effectiveness and efficiency into networks. From DSX-3 and DSX-1 systems to Cat 5e and Cat 6 panels, patch cords and accessories.

Power Distribution, Protection and Management



With decades of experience in communications power, Telect provides a comprehensive range of versatile, reliable distribution solutions for central office, wireless network, remote terminal and enterprise applications. Low-, intermediate- and high-current panels are available.

Equipment Racks and Cabinets



Choose from the industry's most complete line of equipment racks and cabinets, for central offices, data centers, outside plant, battery backup, and all types of communications environments.

Indoor and outdoor cabinet options range from standard configurations to custom designs.

Cable Management Systems

One source for total cable management – Telect. Whether your application requires optical cable trough, cable rack, superstructure components, or all types of cable management, Telect solutions are engineered to reduce overall installation and material costs while providing complete cable management coverage.



Learn more at Telect.com.

Brightwell Appointed RVP for Carolinas Region of AFCEA

By Tracy Vogler

Armed Forces Communications and Electronics Association (AFCEA) International appointed Jane Brightwell as the Regional Vice President for the Carolinas Region at the 2007 Transformation Warfare Show held in Virginia Beach June 19-21.

Ms. Brightwell, Vice President, Strategic Business Development for Walker and Associates believes that “the Carolinas regions will benefit greatly over the next 5 years as the Base Realignment and Closure (BRAC) process unfolds.”

“Our local AFCEA chapters can help organizations and individuals acclimate to the change. We will also provide the opportunity for defense and telecommunications industry to come together to develop solutions and ideas to meet the communications needs of the transforming war fighter. BRAC could be a catalyst to move the Carolinas regions from a textile and agriculture based economy to more of a defense based one. Our

region already has a base of significant technology companies located within our two states. Part of my responsibility as an RVP is to facilitate the growth of the Carolinas chapters of both civilian and military membership by helping these chapters reach locally based industries as well as include new industries moving into the state to support the base changes.”

“Assisting the chapters with their education outreach to the community and its members through grants and scholarships is perhaps the most enjoyable part of this assignment. Most chapters hold fund raisers such as Technology Expo's and golf tournaments to raise funds for Education Scholarships and Science Teaching Tool Grants. Education is a crucial element in preparing the military and civilian members to operate in an ever changing technology world.”

The Carolinas region covers North and South Carolina which includes the North Carolina Chapter (Ft. Bragg), Coastal Carolina Chapter (Camp

Lejeune), Palmetto Chapter (Shaw AFB), Piedmont Chapter and South Carolina Lowcountry Chapter (Charleston, SC).

Located around the world, AFCEA's 136 chapters give engineers, programmers, managers, government officials and military personnel continuing opportunities to exchange ideas about communications, intelligence, imaging and information systems technology. AFCEA International is a non-profit membership association serving the military, government, industry, and academia as an ethical forum for advancing professional knowledge and relationships in the fields of communications, IT, intelligence and global security. More information may be found at www.afcea.org.



NEWMAR®

Powering the NetworkSM

Newmar designs and builds DC power components and systems for a wide range of demanding network power applications.

Whether you need a complete system with rectifiers, batteries, distribution and alarms or an individual power component or accessory, Newmar manufactures a full range of high quality power products you can choose from.

Contact a Walker & Associates representative for your Newmar Power choices.



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Hot Swap Rectifiers



Power Management System



DC-DC Converters



DC-AC Inverters



Distribution Panels

- Circuit Breaker
- Fuse

Battery Strings

Battery Trays

Relay Racks



All necessary components factory installed to meet your system requirements.

UPCOMING INDUSTRY EVENTS

For a complete listing of all national and regional shows in which Walker will participate, complete with booth numbers, dates, and participating vendors, visit us at www.walkerfirst.com and click on Upcoming Events.

August

Montana Telecommunications
Annual Convention
Kalispell, MT

MTIA Annual Conference
Branson, MO

TTA Annual Convention
Nashville, TN

OSP Expo
San Jose, CA

LandWarNet
Fort Lauderdale, CA

September

Texas Telephone Association
Annual Convention and
Showcase
San Antonio, TX

Ohio Telecom Association Annual
Convention
Cleveland, OH

October

FTTH Council Expo
Orlando, FL

WSTA Fall Conference
Middleton, WI



Nevada Telecom Association
Annual Convention
Las Vegas, NV

Alaska Telephone Association
Showcase
Anchorage, AK

PTA/NYSTA Fall Joint Showcase
State College, PA

Mid-America Telecom Showcase
Kansas City, MO

Midwest Telecom Expo
Fort Wayne, IN

Carolina-Virginias Telephone
Membership Association Fall
Meeting
Asheville, NC

Fall Conference and Supplier
Showcase of the Kentucky
Telephone Association and the
Tennessee Telecommunications
Bowling Green, KY

November

Iowa Telecommunications
Association Convention & Annual
Meeting
Des Moines, IA

South Carolina Telephone
Association Fall Conference
Columbia, SC

Minnesota Telecom Alliance Fall
Conference
Alexandria, MN

Montana Telecommunications
Association Showcase
Billings, MT

The bathtub was invented in 1850 and the telephone in 1875. In other words, if you had been living in 1850, you could have sat in the bathtub for 25 years without having to answer the phone. ~Bill DeWitt, 1972



BRAIN FREEZE

Take a break and complete the puzzles below, then go to www.skinnywire.net/solutions to check your answers.

SUDOKU

Sudoku (sūdoku) is a logic-based number placement puzzle. The objective is to fill a 9x9 grid so that each column, each row, and each of the nine 3x3 boxes contains the digits from 1 to 9. The puzzle setter provides a partially completed grid. Try your luck and check your answers at www.skinnywire.net/solutions.

7			2		1			8
		2			7	9	3	
				8			2	
1				7				2
			9		8			
8				5				9
	4			1				
	1	9	7			2		
6			3		9			5



by
Ashley Jobe



DEJA-WHAT?

STUFF YOU MAY OR MAY NOT KNOW

- Strategy Analytics new study confirms that by 2011, worldwide broadband subscriptions will surpass the 536 million mark. Out of this forecast, DSL represents over half the market, while FTTX and WiMAX will be the fastest growing new access technologies over the course of the next five years.
- Released in July 2007 the study, "How Customer Satisfaction Impacts Telecom and Cable's Battle for the Consumer", discovered that while cable companies have the current edge in terms of bundle sales, telecom providers have the edge in future growth due to higher satisfaction scores. For example, 20% of households that currently do not purchase service bundles plan to in the upcoming year. Of that figure, 54% would prefer a telecom service bundle versus 44% would prefer a cable service bundle. Even though with current bundle customers, cable has a 68% to 32% lead.
- According to iSuppli's "Broadband Paradigm Shift or Just an Interim Step to Fiber?" Report, the number of subscribers worldwide who get their broadband Internet connections from telecommunications companies (telcos) will reach 413 million in 2010 and over 70 million of these telco brand subscribers will have fiber-to-the-home (FTTH) connections by 2009.



Can you tell what the distorted image below is?

Take a guess, then visit

www.skinnywire.net/solutions to see if you are right.



Adding Video Services Warrants New Central Office Considerations

By ADC

Although the distribution and access elements within the outside plant (OSP) portion of the fiber-to-the-premise (FTTP) network demand the majority of attention during deployment, it's important not to overlook implications to the central office (CO). Any FTTP network requires the same flexibility as the transport network, which all begins in the CO.

Factoring in the video

The addition of video signals presents new challenges when configuring the CO to maintain the same flexibility and price points desired in deploying FTTP. The video overlay adds additional fiber cable management and optical splitting requirements.

From the video OLT, video signals pass through several erbium-doped fiber amplifiers (EDFAs) used to amplify and split the signal. Each EDFA output is further split by additional optical splitters to maximize the video output, allowing the most PONs to be served using the fewest EDFAs.

The use of optical splitters is critical, but there are several placement options. The splitters could reside in the OLT equipment frame or the fiber frame. Placing the optical splitter in the fiber frame enables more flexibility, allowing video signals of various power levels to reach PONs at various distances.

Optical protection switching is also a consideration. Through diverse path routing, both a primary and protect video feed enters the optical protection switch in the video OLT equipment frame. The primary video feed throughputs to the video OLT, but should that signal drop below a pre-set power threshold, the system automatically switches to the redundant path, or protect video feed. The diverse path routing takes place at the transmission side where a 1x2 splitter creates two diverse signals.

Test access is crucial

Testing the FTTP network is a serious challenge for service providers. Advanced ODF solutions are being adopted to enable remote test and monitoring

functionality, reduce troubleshooting and fault isolation time. The net result is efficiency, reliability, and cost savings.

Built-in diagnostics identify problems within the electronic equipment but require specific test equipment and non-intrusive access points. In any FTTP network, it's a point-to-point connection from the OLT to the customer. The addition of an optical NxN switch allows any fiber to be tested with any test equipment from the Network Operations Center, providing technicians' quick, easy, reliable access to the network.

Future-proofing is essential for long-term success

Designing the CO to accommodate FTTP requires similar, if not more stringent, cable management and architectural attributes as any transport network. Video overlay creates additional demands on the CO, which must be addressed up-front to protect future reliability and profitability of the FTTP network.

Why IPTV/IP Video Transport?

By Westell

For residential users, IPTV is often provided in conjunction with Video on Demand and may be bundled with Internet services such as Web access and VoIP. The commercial bundling of IPTV, VoIP and Internet access is referred to as "Triple Play" service (adding mobile voice service is called "Quadruple Play"). IPTV is typically supplied by a service provider using a closed network infrastructure. This closed network approach is in competition with the delivery of TV content over the public Internet, called Internet Television. In businesses, IPTV may be used to deliver television content over corporate LANs.

Service providers that deploy IPTV services rely on their IP networks to transport live IP Video without packet loss. Without this basic underlining capability there is no IPTV system. IPTV systems with significant transmission loss suffer not just from poor quality with the customer base but significant operational issues in both frustration and cost.

The ultimate triple-play residential gateway for broadband service providers,

Westell's UltraLine™ Series3, is one of the most versatile platforms in the North American market. The UltraLine Series3 offers a flexible and reliable foundation for service providers to deliver cutting-edge services, including IP video and integrated voice, video and data applications

Deliver Video-Ready Bandwidth Through Fiber, Copper, Coax, or Ethernet

The Westell UltraLine Series3 is among the first and only line of broadband gateways in the industry to support all key emerging WAN technologies including VDSL2 for FTTN (Fiber to the Node) and multi-dwelling unit (MDU) applications, as well as Ethernet WAN and digital coaxial WAN for interfacing with an ONT for FTTP (Fiber to the Premise) deployments.

Leverage Existing In-Home Coax Cabling

The integration of a digital coaxial connector allows any of the UltraLine Series3 gateway models to be connected directly to the consumer's existing in-home coax-

al cabling. Once connected to the in-home cable network, the UltraLine Series3 can reliably deliver 100 Mbps+ of data and IP video throughout the customer premise without running new in-house wiring. This means less labor, fewer materials and lower operating expenses. UltraLine Series3 provides up to a 50% increase in data rate over previous generation solutions, which is accomplished through packet aggregation and the short packet composition of most multimedia traffic.

Westell is a founding member of the IPTV Interoperability Forum (IIF). The IIF is an inter-industry Telephone Company focused organization that has set the standards for CPE Gateways. It acknowledges the inherent differences between data and video transmission and networking over IP. That commitment has led Westell to add to the UltraLine Series 3 a combination of Quality of Service (QoS) and WMM™ features which guarantee reliable, high-quality, end-to-end delivery of video, voice, and data services.

Connecting the world.

Total Access® 5000 Multiservice Access Platform



- More flexible service deployment
- Greater network interface options
- Increased bandwidth
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- Voice and data convergence
- Single-vendor support and training
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- Total Access and other ADTRAN products are RUS accepted

ADTRAN® is the Name Behind the Network.

We develop products and services that connect business and residential subscribers to high-speed communications networks.

DSL Access Where You Want It, When You Want It

Offering numerous interfaces and service delivery methods, ADTRAN's Total Access® DSLAMs position a network for cost-effective delivery of today's high-speed Internet services and a clear-cut path to IPTV and other premium service offerings.

Minimizing the Cost of Mobile Backhaul

ADTRAN's end-to-end mobile backhaul solutions feature drop-and-insert capability, go-and-grow connectivity as well as complete remote management and bandwidth utilization.

A New Standard in Optical Access

ADTRAN's optical systems support high-density, multiple-service applications in a single platform and feature the operations interfaces and support necessary for deployment in a wide range of network applications.



OPTI Series
OC-3/OC-12/OC-48 SONET Multiplexers



Total Access® 1100 and 1200
Outside Plant DSLAMs



MX3 Series
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MX4 Series
Wireless Bandwidth Manager



Total Access® 600/750/850 Series
Integrated Access Devices



Advanced telecommunication products and services supporting today's voice, data, video and Internet applications. ADTRAN is a business partner helping you build the high-performance infrastructure needed to compete in today's dynamic telecom markets. Our comprehensive

product line includes solutions spanning from the exchange to the customer premises. Whether you are considering a system-wide or niche implementation, ADTRAN has the products, solutions, and experience to connect you to the world.

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