GIGABIT ATM MONTHLY NEWSLETTER

COVERING APPLICATIONS,PREMISE NETWORKS MARKETS & TECHNOLOGY

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Ethernet switch market 3Q06 market leaders (revenue)	
Manufacturers' revenue $4.3 billion	
Vendor	**Rank**
Cisco	1
HP ProCurve	2
Nortel	3
Foundry	4
3Com	5
Source: Dell'Oro Group	

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NEW PRODUCTS

OCP adds XFP 10km temperature options to portfolio

Optical Communication Products Inc., a manufacturer of fiber-optic components, announced the availability of its industrial (-40 to +85C) and extended- (-5 to 85C) temperature XFP pluggable optical transceivers.

"We are addressing the expanded application requirements of the XFP market by offering additional operating

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temperature options to our portfolio," said Kirk Bovill, director of marketing. "We are sampling our cost and performance optimized modules to several customers."

The XFP transceiver is designed to provide multiprotocol support for 10-Gigabit Ethernet, OC-192 SONET/SDH, and 10-Gigabit Fibre Channel to distances of up to 10km. The multirate modules support data rates ranging from 10.7Gbps to 9.95Gbps. These modules are compatible with ITU-T G.691, ITU-T G.709, and Telcordia GR-253 standards.

The serial electrical interface and DDM functionality are based per the XFP MSA. The DDM functionality enables the end-user to monitor internal temperature, DC supply voltage, transmitter bias current, transmitter output power, and receive optical signal level in the performance of the XFP transceiver. Integrated DDM functionality also incorporates warnings and alarms to monitor these parameters.

Pricing and shipping information is available by contacting OCP sales at 818-251-7100 or via email at sales@ocp-inc.com.

OCP's industrial temperature 10Gbps XFP transceiver will be on display at OFC 2007 on March 25-27, 2007, at the Anaheim Convention Center, California, USA. Please visit OCP booth # 2561 for more information.

SMC ships new ultra-efficient single chip 28-port Gigabit Ethernet switch

SMC Networks (www.smc.com) announced the shipment of SMC's newest Gigabit workgroup switch, the 28-port TigerSwitch 1000 (SMC8728L2).

Designed to turn today's common unmanaged data networks into intelligent, multimedia-rich converged Internet Protocol (IP) infrastructures with huge performance advances and built-in economic benefits. The new Layer 2, fully managed 28-port Gigabit Ethernet switch with two 10-Gigabit uplinks for future upgrade options is available now, at an MSRP of $1,299.99.

The TigerSwitch 1000 (SMC8728L2) provides 24 RJ-45 plus four SFP ports in an efficient single-chip switching solution, and is the newest in SMC's family of efficient, high-performance Gigabit switches. The technology used to build the SMC8728L2 TigerSwitch 1000 allows it to operate 28 channels simultaneously while maintaining full Gigabit wire speed performance on each channel.

"This newest 28-port TigerSwitch 1000 Managed Gigabit switch joins the 48-port TigerSwitch 1000 introduced last year, bringing the kind of price/performance that will encourage network upgrades that transform unmanaged data networks into much more intelligent, multimedia-rich converged infrastructure," said SMC's product manager, Iain Kenney.

The performance offered by both the 28- and 48-port TigerSwitch 1000 (SMC8728L2 and SMC8748L2) switches will help networks move to the next level of performance while simultaneously slashing operating costs. Many networks today are unable to distinguish between voice, video, and data Internet Protocol (IP) traffic, necessitating separate, dedicated data and voice networks. The technology built in to the new TigerSwitch 1000 family of switches has the intelligence to dynamically recognize these services, thus enabling their convergence onto a single, reliable, and efficient multimedia-aware infrastructure. The TigerSwitch 1000 family of switches will likely be a catalyst for rapid acceleration in the replacement of Private Branch Exchange with IP telephones in businesses, among other advances.

In challenging high-traffic environments, TigerSwitch 1000 switches provide Gigabit switching at full wire speed. The SMC8728L2 and the SMC8748L2 switches deliver high performance and are loaded with advanced features that demanding environments need. Security is paramount in today's networks, and these new switches deliver, with ACLs and 802.1x for secure network access, and SSH, SSL/HTTPS for secure management enabled

by RADIUS and TACACS+. Flexible Layer 2/3/4 traffic prioritization and rate-limiting enable Quality of Service across the network, and network segmentation is provided by port- and tag-based VLANs.

The TigerSwitch 1000, in both the 48-port and the new 28-port versions, also bring a comprehensive Layer 2 management feature set, including Spanning Tree, VLANs, and link aggregation (LACP), which also supports trunking the 10G ports. Built for robust workgroup and backbone switching today, the SMC8748L2 and SMC8728L2 have the flexibility to allow for upgrades to even more features that will be released in the future.

"These high-performance switches pack the power of 10G capability, so they can excel in the most demanding networks, now, and into the future," added Kenney. "10/100/1000 copper connectivity built-in, with fiber optional ports that don't cut into copper density and ten Gigabit uplinks make it extraordinarily flexible and adaptable — and the full range of advanced features make them perfect for the most demanding Enterprise and workgroup environments."

The new TigerSwitch 1000 28-port switch (SMC8728L2) and the TigerSwitch 1000 48-port switch (SMC8748L2), both with optional uplinks and redundant power supplies, are available now. The new 28-port SMC8728L2 has an MSRP of $1,299.99**;** the 48-port SMC8748L2, released last year, is priced at $1,999.99 MSRP. For more information about SMC Networks or its products, visit www.smc.com, or call 800-SMC-4YOU (800-762-4968).

Picolight demonstrates industry's first 10GBASE-LRM SFP+ Transceiver

Picolight Inc., a designer and manufacturer of optical transceivers and components, announced that the company successfully demonstrated 1310nm vertical cavity surface-emitting laser (VCSEL) transceivers in a 10-Gigabit Small Form Factor Pluggable (SFP+) design for the IEEE 802.3aq serial optical interface standard (10GBASE-LRM). With extended-reach capability, small footprint, and low power consumption, the new transceivers satisfy a broad range of extended-link applications on legacy multimode fiber applications up to 220 meters in enterprise networks, using electronic dispersion compensation (EDC).

Picolight recently conducted the demonstration as part of an Ethernet Alliance interoperability test at the Cisco Photonics Labs in Monza, Italy.

"The success of the product demonstration marks an important milestone in Picolight's continued industry leadership of VCSEL transceivers for extended reach applications," said Vidya Sharma, vice president of marketing, Picolight.

"With the recent adoption of the IEEE 10GBASE-LRM standard, Picolight is well-positioned to deliver a more cost-effective and power efficient solution for datacenters and enterprise networks as they look to extend their reach with 10G Ethernet applications."

Earlier this year, Picolight was the first company to demonstrate 10G 850nm and 1310nm VCSEL-based SFP+ transceivers at OFC/NFOEC 2006. Since the initial demonstrations in March 2006, Picolight has sampled 8/10G 850nm SFP+ transceivers to more than 12 strategic customers and partners.

"Picolight was the first company to market 4G 1310nm VCSEL-based transceivers for long-reach Fibre Channel applications and this product demonstration further validates the performance benefits 1310nm VCSEL delivers for the next-generation 10Gbit Ethernet deployments," said Jack Jewell, founder and chief technology officer of Picolight. "Our 1310nm VCSEL-based 10G Ethernet LRM SFP+ transceivers deliver lower power consumption at 450mW, lower electromagnetic interference and lower heat generation compared with distributed feedback laser,

resulting in increased performance and reliability of our 10G SFP+ transceivers."

The 802.3aq serial optical interface standard was developed by the IEEE for the purpose of offering a cost-effective and small form factor-compatible 10-Gigabit Ethernet optical links for extended-reach applications on 62.5-micron Fiber Distributed Data Interface (FDDI)-grade legacy multimode fiber. 10GBASE-LRM uses EDC techniques to support transmission of 220 meters on installed legacy multimode fiber plant in datacenter and enterprise networks.

Methode's dataMate Products introduces its new high-speed-over-copper Gigabit Ethernet adapter

DataMate Products, a division of Methode Electronics Inc., announced its new high-speed-over-copper ExpressCard Form-Factor Gigabit Ethernet Adapter. This high-speed data transfer solution is targeted at the emerging ExpressCard market where next-generation laptops are configured with ExpressCard slots. The adapter is available as a fully packaged, consumer-quality product.

The dataMate Adapter enables all laptops to support the ExpressCard Form-Factor that is the new standard in notebook computers. The adapter is housed in a standard 34mm ExpressCard case, which is one-half the size of a standard PCMCIA card, and is easily plugged into any laptop ExpressCard port.

dataMate has designed the new Gigabit Ethernet ExpressCard Adapter to be compliant with the ExpressCard standard. It offers 10/100/1000M data rate auto-negotiation, it is IEEE 802.3 compliant, and it features full duplex mode that doubles the network connection speed. The Adapter is Microsoft plug-and-play compatible, is easy to install, and offers power management support with easy-to-read LED indicators. When a standard CAT 5/6 Ethernet cable is plugged into the Adapter, the user will have access to upload and download speeds ranging from 100Mbps to 1Gbps, depending on network capability. No external power is required as the adapter is powered by the PC system. The adapter is FCC and CE compliant.

Ample Communications and EZchip Technologies offer interoperable hardware solution for high density metro Ethernet aggregation

Ample Communications, a provider of communications silicon for wireline network systems, announced the interoperability of its Gigabit and 10-Gigabit Ethernet MAC devices with EZchip's NP-2 Network Processors.

With this highly integrated, joint solution, customers build metro Ethernet switching and aggregation systems and benefit from features including intelligent oversubscription, flexible packet processing, and extensive traffic management.

This platform enables networking vendors to easily and quickly initiate software development for their products, thereby reducing development time by up to 50 percent and speeding time to market.

The combination of Ample's MACs and EZchip's Network Processor enables system vendors to implement high-density 10/100/1000 Ethernet or 10-Gigabit Ethernet aggregation solutions for Metro Ethernet applications, significantly saving cost, power, and board space. Using the combined solution, customers benefit from full rate and intelligent oversubscription capabilities offered by Ample's MAC devices, and the flexible packet processing and traffic management capabilities of EZchip's NP-2.

"The service provider will need to offer quality of service, bandwidth guarantees, traffic shaping, etc., at lower cost," said Mat Steinberg, vice president of business development for Ample Communications. "The combined Ample and EZchip solution enables networking systems with the benefits of oversubscription and programmable packet processing."

"We have had a very successful and productive relationship with Ample for several years now, which resulted in design wins in multiple customer platforms," said Amir Eyal, vice president of business development for EZchip Technologies. "Our joint solution allows customers to offer cost-effective and feature rich systems for triple-play delivery in Carrier Ethernet networks."

CONTRACTS

ENMAX Envision deploys Juniper Networks routers to enable new Ethernet services

Juniper Networks Inc. announced that ENMAX Envision Inc. ("ENMAX Envision") has deployed Juniper T-series routers to form the core of its new IP/MPLS network backbone and to enable the introduction of a range of new ultrahigh-speed Ethernet based business-class services. ENMAX Envision will deploy T640 routers in all its major points of presence throughout Calgary. Deployed with Juniper's advanced Ethernet Services cards, the T-series will enable ENMAX Envision to deliver new line-rate GigE and 10GigE Services to their clients over a resilient MPLS backbone.

"With the Juniper platforms, we are able to introduce new Ethernet based services that deliver exceptional quality, prioritization and guaranteed network availability at very competitive prices," said Erwin Kantwerg, general manager at ENMAX Envision. "The Juniper routing platforms ensure our network operates with industry-leading reliability, and with the new advanced Ethernet Services cards, will provide us with network flexibility and unique, granular quality of service capabilities that will enable us to significantly differentiate our services in the Calgary market."

ENMAX Envision provides customized connectivity solutions tailored for the intricate communications needs of Calgary's business community. The new state-of-the-art T640 network enables the delivery of comprehensive metro Ethernet services, Dedicated Internet Access, and traditional transport services like private line, as well as fully customized, redundant business continuity solutions for key applications like datacenters.

Juniper Networks Ethernet Services (IQ2) cards provide high-density Ethernet interfaces and advanced, fine-grained quality of service (QoS) functionality in a modular system that can be added incrementally and non-disruptively to all M- and T-series routing platforms. By combining Juniper Networks' proven strengths in routing with next-generation Ethernet technology, the Ethernet Services cards enable service providers to efficiently introduce new, high-value services while concurrently reducing capital and operational costs.

"ENMAX Envision is truly one of Canada's most innovative network service providers and has built a solid reputation on providing the highest capacity Ethernet Services to the Calgary marketplace for many years. The Juniper T640 platform will again allow ENMAX Envision to continue an outstanding tradition by enabling Gigabit Ethernet and 10-Gigabit Ethernet Services at line rate with enhanced Quality of Service capability. We are very excited to be working with them as they expand their network and introduce these new services," said Tim Lambie, vice president, Americas International for Juniper Networks. "ENMAX Envision's new Ethernet services are another proof point of the value that comes from combining Juniper's strengths and experience in highly reliable service provider routing with cost-effective and efficient Ethernet technology."

Claranet chooses Hibernia Atlantic to deliver high-performance trans-Atlantic communication for business

Hibernia Atlantic, the only diverse trans-Atlantic transport provider, announced that it has successfully connected Claranet, the Internet experts that manage businesses' information

technology services, to its high-performance cable network crossing the North Atlantic.

Hibernia Atlantic will provide Claranet with the fastest trans-Atlantic communication channel available. The agreement will connect Claranet to a route-protected, clear-channel, full 1,000 Meg Gigabit Ethernet (GigE) link from New York City to London. It also includes an upgrade option to split the circuit into two linear segments, a London/Manchester and a Manchester/NYC segment.

Through physical diversity, the Hibernia Atlantic network connection will be enormously reliable. The network resiliency of the connection will allow Claranet to continue to operate industry-leading service level agreements (SLAs) for its customers.

Claranet can now move network traffic directly from Manchester to the USA without requiring backhaul to the south of the UK and employing multiple carriers. This will not only save Claranet money, it will reduce latency or delays in the delivery of data, which will make Claranet's managed applications even more effective.

"We offer the highest performance Ethernet in the market; SDH performance with the friendliness and functionality of Ethernet," stated Bjarni K. Thorvardarson, CEO for Hibernia Atlantic. "Rod Beck and our Hibernia team worked closely with Claranet to deliver a network that offers security, diversity and resiliency."

David Friedman, Claranet's Network Manager, said, "Claranet's new agreement with Hibernia is great news for our high-bandwidth business customers. Hibernia Atlantic owns and operates the only direct Trans-Atlantic cable from the USA and Canada to Ireland and the UK. Hibernia's unique submarine cable avoids the usual shipping route and the high levels of erosion this can cause. In our constant pursuit of excellence in connectivity, our clients will experience the highest capacity and quality of service available."

YouSendIt builds resilient, high-performance network with Force10 Networks to process more than 30 Terabytes of data a day

Force10 Networks announced that YouSendIt, a provider of file delivery, has deployed the S-Series family of datacenter switches to transfer more than 30 Terabytes of data per day. The Force10 S50 delivers the core-like resiliency and density YouSendIt needs to enable more than 9 million users per month to transfer files up to 2 Gigabytes.

"Our mission is to simplify the process of sending large files such as digital video or complex graphic documents, and we need a network that can support our rapidly growing subscriber base and the massive traffic this creates on our network," said Ranjith Kumaran, founder of YouSendIt. "With the Force10 S50 in our network, we are able to continue scaling our business to serve more subscribers while ensuring the integrity of our network and service."

With over 3 million registered users across 220 countries, YouSendIt has already transferred more than 400 million files that can be as large as 2 Gigabytes each. To support this rapid growth in subscribers and large files, YouSendIt deployed the Force10 S50 in the core of its network. Leveraging the resilient stacking capabilities of the S50, YouSendIt has built a scalable, high-density network that enables its users to easily transfer files while avoiding the size limitations of email systems.

YouSendIt has deployed the Force10 S50 switches to interconnect the 225 servers that users upload their files onto for others to retrieve. The S50s provide the resilient high capacity YouSendIt requires to process more than 30 Terabytes of data a day and ensure the availability of its service.

"The Web 2.0 world has fundamentally altered how people interact over the Internet with applications such as the file sharing service YouSendIt provides, creating strong demand for reliable, high-performance networks," said Mark

Cooper, senior vice president of worldwide sales at Force10 Networks. “The Force10 S50 is uniquely designed to bring the density and resiliency these networks require to support a service that encourages users to take a more active role in the Internet.”

The Force10 S50 fixed configuration switch supports 48 10/100/1000 ports with two 10-Gigabit Ethernet uplinks to simplify networks that are transitioning from Gigabit to 10-Gigabit Ethernet. To bring core-like resiliency to the edge of the network, the S50 employs unique stacking technology that can connect eight switches in a single virtual switch. Technologies such as auto failover stacking and stacked link aggregation ensure that, in the event of a single switch failure, the other switches in the stack continue to operate with zero packet loss.

GigaBeam receives order for WiFiber from leading European telecom carrier

GigaBeam Corporation announced that it has received an initial order for two WiFiber wireless fiber links from a leading European incumbent wireline and wireless carrier. The carrier is also one of the world’s largest mobile operators. The customer is headquartered in Europe and has operations in Europe and Asia with a subscriber base of greater than 75 million.

Lou Slaughter, chairman and CEO of GigaBeam, stated, “We are excited to receive an initial order from this large European incumbent wireline and wireless carrier. This customer has operations spanning from Europe across the globe to Asia. We see significant opportunity for GigaBeam’s WiFiber product in multiple countries with this customer. This order follows recent approval by the European authorities for use of the 70GHz and 80GHz frequency spectrum and the granting of a CE mark (equipment certification) to GigaBeam for operation of WiFiber across Europe. Europe represents a substantial market for GigaBeam’s products. This order from a leading telecom carrier underscores the acceptance and potential application of WiFiber to be adopted for creating telecom infrastructures in metropolitan areas along with backhaul of mobile wireless services.”

GigaBeam’s technology, utilizing these large blocks of contiguous spectrum, enables multi-Gigabit-per-second communications through use of Gigabit Ethernet and other standard protocols. The current speed achieved by GigaBeam’s WiFiber G-1.25 product series is full duplex at 1Gbps (equivalent to 647 T1 lines or 1,000 DSL connections), which supports GigE protocol. GigaBeam previously announced its WiFiber G-2.7 series, to be released in Q4 2006 and generally available in Q1 2007, which will operate at 2.7Gbps.

The protocols to be supported by the G-2.7 product series include 2 x GigE (2 x 1Gbps); OC-48/STM-16 (2.488Gbps); SMPTE 292M (1.485Gbps), and both 1 and 2Gbps Fibre Channel. GigaBeam also plans deployment of future products capable of 10Gbps utilizing either the 10-Gigabit Ethernet or OC-192 protocol standards.

GigaBeam’s WiFiber technology is similar to terrestrial fiber in terms of speed and reliability. WiFiber has a substantial advantage over terrestrial fiber because WiFiber can be deployed in a day and costs less to deploy than terrestrial fiber. Terrestrial fiber can take months to deploy and also require significant regulatory and environmental approvals prior to installation.

TV Cabo selects Juniper Networks for new IP/MPLS metro networks

Juniper Networks Inc. announced that TV Cabo, Portugal’s largest pay-TV operator, has selected M320 Multiservice Routers from Juniper Networks to build its new IP/MPLS metropolitan networks throughout Portugal. The new networks will enable TV Cabo to deliver digital services such as ultrahigh-speed Internet, broadcast, and on-demand video, as well as new, advanced PacketCable-based services for subscribers.

According to TV Cabo, the constant improvement of network performance is crucial to delivering reliable and efficient new digital services to its customers, with the highest-quality experiences.

"The convergence of video and data onto unified IP network platforms offers TV Cabo increased service opportunity," said Gert-Jan Schenk, vice president of operations, EMEA, Juniper Networks. "The M320 platform is a high-performance platform built upon open standards, which simplifies network integration, enhances service delivery and assures the consumer experience."

Within TV Cabo's new infrastructure, the M320 routers will connect using 10-Gigabit Ethernet rings. The M320s will enable TV Cabo to use IP VPNs (virtual private networks) to segregate services, provide QoS implementation to prioritize each service appropriately, and support both IP Multicast and Unicast for efficient video distribution. TV Cabo will also use MPLS FRR (fast reroute) to automatically reroute traffic around failure points within the network, ensuring service quality even in the event of accidents or equipment failures.

Juniper Networks' M320 Multiservice Edge Platform is the industry's most scalable, secure, and reliable 10Gbps-capable multiservice edge routing platform. The M320 shares the proven, reliable JUNOS operating system with all Juniper M- and T-series platforms, ensuring that customer networks operate with the same levels of performance across many different platforms, applications, and locations.

Indiana University powers high-performance distributed cyberinfrastructure with Force10 Networks TeraScale E-Series

Force10 Networks announced that Indiana University (IU) has deployed the TeraScale E-Series family of switch/routers to build a distributed, flexible high-performance cyberinfrastructure. In addition to IU's AVIDD and Big Red supercomputer clusters, the cyberinfrastructure includes the university's Data Capacitor, which provides researchers across the nation with a unique facility for temporary massive data storage.

"To support broad research initiatives across our campuses as well as within the TeraGrid project, we needed an infrastructure that could deliver the flexibility and scalability that would allow us to interconnect our computing clusters as well as enable us to build new ones," said Matt Davy, chief network engineer at Indiana University. "Force10's 16-port 10-Gigabit Ethernet cards give us the flexibility to reconfigure our network as research projects demand without complicating the architecture while providing the scalability to add more computing capacity."

The Force10 TeraScale E-Series and the state of Indiana's I-Light network form the foundation of the high-performance 10-Gigabit Ethernet network that connects IU's Indianapolis and Bloomington campuses, which are 55 miles apart. With the TeraScale E1200, TeraScale E600, and Force10's 16-port 10-Gigabit Ethernet line cards, IU is building the high-density, scalable network it needs to support advanced research needs across both campuses.

The Force10 TeraScale E-Series also serves as a "machine room backplane" for IU's two Advanced Cyberinfrastructure Facilities. Over this infrastructure, tools such as an open message passing interface (MPI) can be used to run MPI applications across multiple locations, supporting, for example, the use of Myricom protocols within one cluster and Gigabit Ethernet between clusters and campuses, leveraging the long-haul fiber-optic capabilities of the TeraScale E-Series.

The machine-room backplane also allows researchers to utilize systems such as the IBM e1350 Blade Center Big Red cluster, the 31st-largest supercomputer in the world, to generate massive amounts of data that can be

stored seamlessly on the Data Capacitor while awaiting analysis.

"Indiana University is a part of the research and education tradition that is committed to leveraging the most advanced technology to further research into complex problems," said Mark Cooper, senior vice president of worldwide sales at Force10 Networks.

"The TeraScale E-Series provides the density and reliability Indiana requires to be on the forefront of computer science research."

The high 10-Gigabit Ethernet density of the Force10 TeraScale E1200 — up to 224 ports in a single chassis — allows IU to simplify its high-performance architecture as well as reduce the capital and operational costs of network ownership. Additionally, the leading per-card density translates into a longer product lifecycle by enabling the university to scale its network as computing demands increase, without the expense of an upgrade.

Indiana University also serves as one of the nine partner sites in TeraGrid, an open scientific discovery infrastructure that integrates high-performance computers, data resources, tools, and leading experimental facilities around the country to create a persistent computational resource.

With the Force10 TeraScale E-Series at the foundation of its connection to the TeraGrid, IU has the high capacity it requires to interconnect with other universities and high-performance research centers around the country, providing access for its students to more than 100 discipline-specific databases.

In addition to IU, nearly all other TeraGrid sites rely on the leading density and resiliency of the Force10 TeraScale E-Series to power their networks and build a countrywide grid network. Among these are the National Center for Supercomputing Applications, the San Diego Supercomputer Center, Oak Ridge National Laboratory, and the Texas Advanced Computing Center.

Border to Border selects Alloptic GEPON for FTTP rollout

Alloptic Inc., a designer and developer of Gigabit Ethernet Passive Optical Networks (GEPONs), announced that they have been selected by Border to Border Communications in Zapata, Texas, to provide their FTTP access solution in the Dolores Remote Serving Area. Alloptic's hardened ONTs and long-reach optics capability prove to be the ideal solution for rural applications.

"Alloptic's access solution performed very well against our extreme operating conditions," said Herman Roark, president and CEO. "In our service area, we need an access solution that can cover a sparsely populated region and stand up to our hot summer weather. Alloptic's solution easily supported our 40km reach requirements and the ONTs stood up to the 145+ degree heat inside the enclosure when mounted in the direct sunlight during the summer. With an Alloptic broadband access solution, we feel our current and long term growth and service delivery needs can easily be accommodated no matter what the future brings."

Alloptic's access network solution has been deployed around the world and offers the only GEPON solution with more than five years of field-hardened operational history. The Alloptic solution uses a standard ITU PON architecture while delivering a Gigabit of bandwidth to a consumer. With a native ability to support traditional TDM voice over an Ethernet-based platform, Alloptic is able to provide today's worry-free telephone services while seamlessly supporting next-generation services like IP HDTV.

"We are pleased to be working with Border to Border as they rollout a true broadband access network," said Shane Eleniak, VP of marketing and business development at Alloptic. "Our system will provide Border to Border greater flexibility in building their network both from a service as well as

network deployment perspective. Our Xgen series of ONTs are ideally suited for Border to Border's service area. All of our ONTs have long reach optics as standard optical components. This allows service providers the flexibility to service less densely populated areas."

Pulse introduces XFP connector modules for high-speed 10-Gigabit Ethernet

Pulse, a Technitrol Company and provider of electronic component and subassembly design and manufacturing, announced a new line of 10-Gigabit (10G) small-form-factor pluggable (XFP) modules for use with 10G hot pluggable optical transceiver modules. The cage and connector comply with the Multisource Agreement 3.0 (MSA 3.0) standard and support OC192/STM-64, 10G Fibre Channel, G.709, and 10G Ethernet protocols in applications such as blade servers, routers, add-drop multiplexers, and remote base stations and central office (CO) equipment. They supply enhanced electromagnetic interference (EMI) protection for 10G Ethernet applications.

Pulse's XFP001/2/3-L series cages support three different heat sink profiles. Pulse's in-house tooling workshop can customize the heat sink profile, allowing designers to configure their printed circuit board (PCB) architecture to maximize the heat dissipation of the heat sink when the air flow over the heat sink is restricted due to the location of the cage and connector within the application.

The standard 1x1 cage measures 21.7mm wide x 65.3mm deep x 13.2mm high. It comes with a clip and heat sink. Heat sinks come in three interchangeable height profiles. The XFP001-L is 13.5mm, the XFP002-L is 6.5mm, and the XFP003-L is 4.2mm. The easily installed external clip attaches to the top of the heat sink and the cage, holding it in place and maintaining a solid mechanical contact between the optical transceiver and heat sink, thus assuring minimal thermal resistance and maximum heat dissipation properties without degrading EMI performance. The cage, made of nickel-plated copper alloy to prevent oxidation, is uniquely constructed so as not to deform during press fitting.

The XFP001/2/3-L has an insulating barrier underneath the main body of the cage to prevent PCB signal traces from shorting to the underside of the cage. To enhance EMI performance, a conductive gasket is located at the back of the cage to improve the electrical conductivity between the cage and the optical transceiver. A series of EMI ground contact points are placed around the opening of the cage to prevent noise escaping through the front aspect of the cage gap between the optical transceiver and the cage wall. To further enhance the screening around the connectors, a series of flexible metal contacts are used to ground the cage to the PCB, thus surrounding the connector with an effective Faraday cage to provide maximum EMI protection. A gasket is placed between the rear surface of the cage and the PCB to further seal the cage and PCB together.

The XFP001/2/3-L series is versatile and can handle optical transceiver links as well as transceivers configured to operate as traditional copper RJ45 connectors, so the series can be configured to each company's internal networking requirements for balancing load and bandwidth. Pulse's cage/connector package affords reliable mating of all parts, maximizing alignment with the transceiver that plugs into the cage. The package has been tested to 750 cycles minimum. The connector's surface mount pins support 0.004-inch co-planarity between pins. Contacts are selectively plated to 30-micron gold. The system is RoHS compliant.

The price for the XFP001/2/3-L cage, clip, and heat sink unit is $25.00, $26.00, or $27.00, depending on order configuration and shipping destination, for quantities of 1,000, and they are available for delivery in 6 weeks. The price for the XFP connector E81N0-YCUDF4-L is $5.00. This connector is compatible with all cages. The

cage, clip, and heat sink can be purchased assembled with the connector, providing a tested system that is board-ready and can be connected to the transceiver. Detailed specifications for the XFP series are available at http://www.pulseeng.com/connectors.

Telco Systems launches new generation of carrier-class AdvancedTCA blades for carrier Ethernet and high-availability applications

Telco Systems has introduced two new hub blades that deliver unparalleled Ethernet connectivity to AdvancedTCA platforms. Telco Systems' T-Hub1 and T-Hub2 blades offer high-bandwidth multilayer networking, with separate base and fabric Interface switching for enhanced security. Powered by Telco Systems' field-proven, carrier-grade BiNOS networking OS, these ATCA solutions enable partners to focus on application development and integration and reduce time-to-market.

Compliant with PICMG 3.0/3.1, the blades deliver the highest packet processing capability to provide the building blocks that enable telecommunications equipment manufacturers to deliver advanced applications such as IMS, media gateways, and call servers. The T-Hub blades provide full separation between base and fabric interfaces, supporting 1GigE and/or 10GigE or multirate ports. These modules provide flexible fabric interface connections, with Gigabit Ethernet and Fibre Channel to all 23" ATCA chassis slots. 10GE Ethernet uplinks and multiple Fibre Channel front interfaces provide traffic aggregation.

Advanced management and high availability are supported through BiNOS, the company's extensive, field-proven networking software suite. BiNOS networking software delivers state-of-the-art connectivity, including switching, IPv4/IPv6 routing, MPLS, QoS, advanced security, VPN switching and routing, and ring-attached resiliency with sub-50ms protection, while delivering wire speed Layer 2-4 networking. This unique combination of hardware and software creates a truly "ready-to-deploy" networking solution that allows faster integration with superior traffic control and security.

"This innovative ATCA solution positions the company as one of the leading providers of comprehensive AdvancedTCA platforms found in the market today," said Dr. Zvi Marom, CEO of Telco Systems. "We have been very successful in providing AdvancedTCA-based products to telecommunications equipment manufacturers enabling a straightforward integration into wider scale platforms. We look forward to serving the various needs of existing and new partners in the communications, enterprise, medical and military markets."

Force10 Networks TeraScale E-Series delivers high-performance resiliency and scalability to world's largest supercomputers

Force10 Networks announced that the TeraScale E-Series family of switch/routers now powers 18 of the world's 100 largest supercomputers, including 2 in the top 10, according to the recently updated Top500 list.

"More powerful processors and higher capacity servers are driving the adoption of larger supercomputers that can explore ever more complex computational frontiers," said Sachi Sambandan, vice president of engineering at Force10 Networks. "The TeraScale E-Series is uniquely designed to serve these high-performance networks by delivering the high density and resiliency that is essential to scaling and fully utilizing this computing power."

Leveraging the high density of the Force10 TeraScale E-Series, the Texas Advanced Computing Center (TACC) moved from 126 on the list to 12 by consolidating multiple high-performance clusters. The European Centre for Medium-Range Weather Forecasts also advanced on the list by utilizing

the scalability of the TeraScale E-Series to increase computing capacity. With leading Gigabit and 10-Gigabit Ethernet densities, the TeraScale E-Series provides the capacity that enables organizations to reduce the complexity of their networks as well as lower capital and operational expenditures.

The Barcelona Supercomputing Center also utilized the density of the Force10 TeraScale E-Series to move from 11 on the list six months ago to 5 most recently. This largest supercomputer in Europe is built upon the IBM Cluster 1350 solution with the Force10 TeraScale E-Series integrated to deliver seamless scalability. Recently, Force10 Networks announced that IBM has integrated the TeraScale E-Series and S2410 into its Cluster 1350 solution to provide high density 10-Gigabit Ethernet interconnectivity.

Teknovus introduces the TK3714 'Turbo' 2.5G EPON ONU Chip

Teknovus, a provider of Gigabit Ethernet Passive Optical Network (GEPON) chips for the deployment of triple-play services in FTTH (fiber-to-the-home) and FTTB (fiber-to-the-business) broadband access networks, announced deployments of the TK3714, known as the Turbo EPON ONU. The TK3714 is fully compliant with IEEE 802.3ah 1.25G EPON specifications and offers an enhanced Turbo EPON mode for 2.5G operation, thus providing a smooth upgrade to higher speeds.

The TK3714 gives service providers the ability to deliver faster speeds to their customers with the same built-in IPTV architecture and QoS (Quality of Service) pioneered by Teknovus. Similar to the TK3713, the TK3714 allows service providers to manage QoS per service per subscriber, which guarantees quality delivery of bandwidth-sensitive triple-play applications. With a 2.5G Turbo EPON, service providers can offer more HDTV channels using existing fiber plants, thereby reducing CapEx and OpEx per channel. Alternatively, with 2.5G Turbo EPON, service providers may support more subscribers per PON while maintaining strict per service per subscriber QoS.

The TK3714 is fully compatible with existing Teknovus EPON deployments having auto-sensing for detecting downstream speeds. It allows service providers to install 1.25G/2.5G Central Office OLT capability when desired and without costly ONU upgrades. This future-proof Turbo EPON ONU provides ITU-T GPON speeds with all the advantages of widely deployed IEEE EPON, including the high-volume manufacturing EPON ecosystem with numerous optics, components, and equipment vendors. The TK3714 supports an effective and immediate bandwidth upgrade path for more than 25 service-provider EPON deployments across five continents.

KDDI is the first announced customer for the TK3714 Turbo EPON. KDDI is a leading Japanese service provider offering both mobile and fixed communications services. According to Mr. Shigeo Morita, senior manager of KDDI's Terminal System Development, "We are experiencing fast FTTH subscriber growth for our triple-play services, known as Hikari One. Teknovus' EPON chips enable us to rapidly and cost-effectively meet the growing bandwidth requirements of our subscribers. Teknovus' TK3714 supports our expansion of advanced IP video services while maintaining superb OAM and strict QoS without the costs of additional wavelengths. The integration of our FTTH network with Tepco's shows our commitment to quality fiber-based networks. Our customer base is expanding rapidly, continuing proof that our long-term business strategy of advanced triple-play services over FMC (Fixed Mobile Convergence) platforms attracts and retains subscribers."

Dr. Rex Naden, CEO of Teknovus, stated, "This next-generation of EPON is testimony to the adoption of Ethernet-based PON around the globe for triple-play services. We are delighted that KDDI represents our first Turbo EPON

deployment. They understand IPTV and its demand by subscribers on both fixed and mobile networks. Our TK3714 enables service providers to migrate to higher speeds while maintaining their existing deployments. EPON is the dominant PON access technology around the globe. The TK3714 demonstrates the ease of moving to higher speeds based on the simplicity and low-cost of Ethernet architecture."

BUSINESS

Ample Communications and Finisar demo 10-GbE interoperability

Ample Communications and Finisar Corp. have announced interoperability between Ample's Redhawk dual-port 10-Gigabit Ethernet (10GbE) MAC and Finisar's pluggable XFP optical transceiver modules. This interoperability enables customers to reduce design time and cost for enterprise, security, and metro Ethernet switching platforms deploying 10GbE, say representatives for the companies.

Ample's Redhawk, a full-rate and oversubscribed two-port 10GbE MAC with integrated XFI SerDes, and Finisar's pluggable XFP modules provide customers with a universal 10GbE line card that supports short-, long-, and extended-reach functionality for 10GbE networking applications. In particular, say the companies, this interoperability enables higher port density for metro Ethernet networking applications and enterprise switches.

"The combination of our products provides customers with a unique solution for their 10-Gigabit Ethernet platforms," contended Mat Steinberg, vice president of business development at Ample Communications. "Establishing interoperability with Finisar is yet another way for us to help our customers bring their platforms to market faster."

"As a leading supplier of XFP transceivers into the telecom and datacom markets, we're very pleased to have demonstrated interoperability between our XFP modules and Ample's Redhawk Ethernet MAC," added Christian Urricariet, director of marketing for high-speed optics at Finisar.

"This industry-leading combination lets our mutual customers bring low power and small footprint solutions to market more quickly and effectively."

XFP is a standardized form factor for serial 10Gbps fiber-optic transceivers used for data transfer rates from 9.95Gbps to 11.1Gbps. It is protocol independent and fully compliant to the following standards: 10G Ethernet, 10G Fibre Channel, SONET OC-192, and SDH STM-64.

Hibernia Atlantic launches its subsidiary company, Hibernia Metro, offering redundant transport services for the New York Metro Area

Hibernia Atlantic, a trans-Atlantic transport provider, announced the official launch of its subsidiary company, Hibernia Metro. Hibernia Metro offers a diverse, secure, and reliable menu of transport products to customers requiring a presence in and around New York City. Hibernia Metro's offerings are a direct response to the overwhelming success of Hibernia Atlantic's trans-Atlantic and terrestrial cable services.

"Launching a company like Hibernia Metro is a natural evolution for both Hibernia Atlantic and our customers," states Bjarni Thorvardarson, chief executive officer of Hibernia Atlantic. "We have found that many of our clients also need diverse network connections within and around the New York metropolitan area. We are proud to offer our extensive services to this exciting market. Following our successful deployment in the New York City area, we will pursue other Hibernia Atlantic metro markets which includes Ashburn, Boston, Albany, Toronto, Montreal, Dublin, Manchester, London, Amsterdam, Frankfurt, Paris and Brussels."

"Hibernia Metro's suite of products and services include 10GbE Lan-Phy, Gigabit Ethernet in increments of 50Mbps, Fast Ethernet in increments of 10, 50 & 100Mbps, Ethernet circuits (Packet over SONET), and a full suite of SONET/SDH circuits," continues Joseph Hilt, vice president of sales and marketing for Hibernia Metro. "For the complete list of offerings and our network map, please visit the company's new, comprehensive Web site, www.hiberniametro.com." Additionally, the Web site illustrates how Hibernia Metro works closely with its parent company, Hibernia Atlantic, to address network deployments that require a presence in the US and Canada and in key cities in Ireland, the UK, and Europe.

MARKET INTELLIGENCE

Dell'Oro Group reports dramatic growth in switches

A recently published report from Dell'Oro Group reveals that the Ethernet Switch market revenue exceeded $4 billion in the third quarter of 2006. The report also indicates that this quarter's remarkable performance also resulted in some shifts in prime vendor positions.

"Not only did we see great quarterly increases in the newer and faster growing segments, such as Layer 4-7 Server Load Balancing and Power-over-Ethernet, but the more mature segments, such as Fast Ethernet, also enjoyed substantial growth," said Seamus Crehan, senior director of Ethernet Switch Research at Dell'Oro Group. The Dell'Oro Group Ethernet Switch Quarterly Report offers complete, in-depth coverage of the market, with tables covering manufacturers' revenue, average selling prices, and port shipments (by speed Fast Ethernet, Gigabit Ethernet, 10-Gigabit Ethernet) for Layers 2-3 (both managed and unmanaged) and Layers 4-7. To purchase this report, please contact Karen Yang, call +1.650.622.9400 x222, or email Karen@DellOro.com.

EMEA metro Ethernet services market witnessing a surge

Research and Markets has announced the addition of "EMEA Metro Ethernet Services Markets" to their offering.

While business Ethernet local area networks (LANs) were primarily used in the past for internal data traffic with minimal dependence on the metro area network (MAN) or wide area network (WAN), the demand for Ethernet and high bandwidth in the MAN/WAN is currently witnessing a surge. This is due to the emergence of a Web-based applications model as well as the widespread use of the application service provider (ASP) model. Several enterprises are connected at Gigabit Ethernet (GigE) speeds. However, these connections ride over time division multiplexing (TDM) circuits, thereby creating bottlenecks in the transport layer. In this context, extending Ethernet to the MAN offers a considerable increase in capacity and transmission speeds, while simplifying network deployment and management.

"Legacy technologies do not allow for flexibility in provisioning bandwidth according to changes in enterprise requirements," said the analyst of this research service. "Hence, Ethernet is rapidly replacing frame relay and asynchronous transfer mode (ATM) networks in Europe, the Middle East and Africa." New business applications, such as networked storage, distance learning, medical imaging, and computer-aided design (CAD)/content addressable memory (CAM) applications, demand greater bandwidth. Moreover, the outsourcing of non-core activities, distribution of sites, increase in the number of remote workers, and globalization of enterprises are fuelling the demand for increased bandwidth, thereby supporting market growth.

This Frost & Sullivan research titled "EMEA: Metro Ethernet Services Market Insight" provides an overview of the market for Ethernet services in MANs in Europe, the Middle East, and Africa. The study addresses the

requirements of the hour as well as the policies adopted by system integrators and service providers aimed at strengthening and broadening product portfolios.

For more information, please visit http://www.researchandmarkets.com/reports/c46586.

Increasing demand for bandwidth drives adoption of MAN technologies

Research and Markets has announced the addition of "World Metro Area Network (MAN) Test Equipment Markets" to their offering.

This Frost & Sullivan research service provides an in-depth analysis of the market that includes key challenges, drivers, and restraints that are impacting MAN test equipment vendors. It also provides a detailed overview of technological and market trends, as well as major market opportunities for and strategic recommendations to test vendors. In this research service, Frost & Sullivan's analysts thoroughly examine the following application segments: research and development (R&D), installation and maintenance (I&M), and manufacturing.

This analysis is available through the Test & Measurement Growth Partnership Service program. With this program, clients receive industry-leading market research such as this, along with technical and econometric data and many interactive features, including Analyst Inquiry Time and Client Councils.

The following technologies are covered in this research:

- Ethernet, Gigabit Ethernet (GigE), and 10-Gigabit Ethernet (10 GigE): Ethernet came forward as a standard system-level network because of its universal acceptance. The term Ethernet was initially used to refer to the family of local area network (LAN) products, but with the emergence of GigE and 10 GigE, the Ethernet technology expanded its market to MANs and WANs as well.

- Synchronous Optical Network/ Synchronous Digital Hierarchy (SONET/SDH): SONET/SDH refers to a group of fiber-optic transmission rates that are able to transport digital signals with different capacities. SONET technology offers a cost-effective transportation in both the access area and core of network. Telephone or data switches, for instance, rely on SONET transportation for interconnection.

- Multi-Protocol Label Switching (MPLS): MPLS is a method that is used to increase the speed of network traffic flow by inserting information about a specific path routed to its destination. MPLS appeared to be a successful solution to meet the bandwidth management and service requirements for next-generation IP-based backbone networks. MPLS deals with scalability and routing issues and can subsist over ATM and frame relay networks.

- Resilient Packet Ring (RPR): RPR is also known as the IEEE 802.17 standard. It is a technology that is designed to improve the data traffic transportation over fiber rings. It is intended to provide the flexibility of SONET/SDH networks with a packet-based transmission in order to increase the efficiency of the Ethernet and IP services. RPR technology provides the fast recovery from network faults and ring topology typical of SONET, as well as the data efficiency, simplicity, and cost benefits traits of Ethernet.

- Wavelength Division Multiplexing (WDM): There are two fundamental ways by which multiplexing can happen in fiber-optic networks: WDM and time division multiplexing (TDM). WDM is a technology that multiplexes several optical carrier signals on a single optical fiber by using various colors of laser light to carry different signals. It allows for increase in capacity and makes it possible to perform bidirectional communications over one strand of fiber.

- Dense Wavelength Division Multiplexing (DWDM): DWDM is an optical technology used to increase bandwidth over existing fiber-optic backbones. It also makes it possible for carriers to be able to increase their network capacity 80 or more times. DWDM

networks are capable of carrying a variety of traffic types at different rates over an optical channel.

- Coarse Wavelength Division Multiplexing (CWDM): CWDM is a category of WDM in which uncooled lasers are applied to overlay optical light channels in a single pipe. CWDM has the capacity to combine up to 16 wavelengths onto a single fiber. CWDM is used primarily for applications with lower data capacity requirements and for fibers that are no longer than 31 miles. As a communication network that covers a vast geographic area such as a city or a suburb, a metro area network (MAN) typically connects businesses to businesses, to a wide area network (WAN), and to the Internet. MAN was originally designed to transmit voice based on time division multiplexing (TDM) technology. As a result, synchronous optical network/synchronous digital hierarchy (SONET/SDH) has become a dominant standard on the optical networks. While this technology has been able to meet all the requirements of MAN adequately, telecommunications applications are becoming increasingly complex. This makes it difficult to transmit the signals generated by applications such as streaming video, teleconferencing, voice-over-Internet Protocol (VoIP), and virtual private networks (VPNs) over SONET/SDH networks. Thus, rising demand for bandwidth for data transmission has driven the growth of networks based on dense wavelength division multiplexing (DWDM) and Ethernet technologies, notes the analyst of this research service. DWDM works by combining and transmitting multiple signals simultaneously at different wavelengths on the same fiber, with a key advantage that its protocol and bit-rate are independent of each other.

Private enterprises are constantly looking for ways to increase bandwidth, as they introduce new services or add new features to their networks. MANs enable such companies to do this by functioning as a key network build-on point. The last few years have seen a tremendous expansion in bandwidth with the widespread adoption of MAN technologies such as Ethernet, Gigabit Ethernet (GigE), and 10-Gigabit Ethernet (10 GigE). Thus, enterprises represent strong growth opportunities for test equipment vendors.

With the wider deployment of Ethernet, GigE, 10 GigE, and SONET/SDH, MAN test equipment vendors can expect higher demand especially for installation and maintenance (I&M) and manufacturing test equipment, remarks the analyst. Many MAN test equipment vendors are aware that Ethernet has huge momentum and is going to be an established standard. One of the major factors fueling this is the ratification of the 802.3ah Ethernet in the First Mile standard, which has added numerous operation, administration, and maintenance (OAM) capabilities to the Ethernet link. It also helps make Ethernet more attractive for Tier 1 participants to deploy this technology to all their large customers.

For more information, please visit http://www.researchandmarkets.com/reports/c46586.