

Get More Access...



# More Services...

## QUICK TIME-TO-MARKET

Our end-to-end, complete SoC solutions accelerate time-to-market for our customers:

- We deliver 12 and 24 Mbps using our ADSL2/2+ technology and up to 50 Mbps with our high performance quad technology.
- Our turnkey VoIP solutions for carrier and enterprise class gateways and consumer telephony provide out-of-the-box ready solutions for quick and easy deployment.
- Our end-to-end Fiber-to-the-Premises (FTTP) ICs enable cost-effective, feature rich, and high-performance Optical systems at the physical layer and protocol layer for both Central Office (CO) and Customer Premises Equipment (CPE) applications.
- Consumers are demanding video, voice and data services on any device at any time. With our ground-breaking innovation and eXtremeSoC Technology™, service providers can offer premium services over secure, reliable, high-speed, fully integrated broadband access infrastructure. So whether they offer VoIP, HDTV on every screen in the home, or video-on demand via PDA, our portfolio of end-to-end broadband access solutions offer a one-stop shop.

## SOLVING YOUR LAST MILE CHALLENGES

From design concept to final test and completion, we work with you to reduce costs and increase your profits. Our investment in resources and infrastructure, our long history of customer involvement and innovation, and our focus on delivering next-generation solutions, is our way of protecting your investment in our technology.

# eXtremeSoC Technology™



## More Speed...

### **HIGH PERFORMANCE, HIGH QUALITY BROADBAND SOLUTIONS**

We live in a world of high expectations. Customers want more broadband services at faster speeds. They want more features and greater capabilities. Most of all, they want more access. And they want it now.

Broadband is the connection point for delivering video, voice, high-speed data, wireless connectivity and other advanced services to consumers and businesses worldwide. Centillum plays a key role in this multi-billion dollar market – innovating system-on-chip solutions that enable end-users to cost-effectively access high performance, high quality, secure broadband services.

### **COUNT ON OUR INNOVATION AND TECHNOLOGY**

With world-class expertise in mixed-signal chips and system design, an experienced senior management team, and state-of-the-art R&D facilities located in various countries around the world, Centillum combines the entrepreneurial energy of a start-up with the solid business experience of an industry leader.

We hold the number one position in the Japan broadband access market, we are one of the world's top providers of ADSL technology, and we have shipped nearly 30 million DSL ports worldwide. With a diversified product portfolio that includes DSL, Voice over Internet Protocol (VoIP) and Optical solutions, you can count on us to solve the last mile challenges associated with deploying broadband across the globe.

# Innovation

# More Distance...

## TURNKEY PRODUCT PORTFOLIO

Centillium is a leading provider of broadband access solutions that address the last mile challenges associated with DSL, Optical and VoIP technologies. Our product portfolio includes:

**DSL** – enabling the delivery of premium broadband services with innovative eXtremeDSL<sup>MAX</sup> ADSL technology with speeds up to 50 Mbps. Centillium technology increases the service provider's subscriber base by offering the longest reach ADSL service in excess of 26,000 feet.

**VoIP** – delivering from 2 to 1,000 channels on a single chip with integrated DSP, network processor and comprehensive wireline and wireless software solutions, Centillium delivers the most advanced technology for high capacity and extremely low-power gateway VoIP designs. On the consumer side, Centillium offers multiple System-on-Chip (SoC) solutions for VoIP, video and data, perfect for applications like media terminal adapters (MTAs), triple play set top boxes and VoIP cordless telephones.

**Optical** – offering the highest integration for cost-effective delivery of bandwidth for bundled services like HDTV, video-on-demand, VoIP and other applications. Centillium is the only established SoC vendor that offers end-to-end, standards-compliant Fiber-to-the-Premises (FTTP) chip solutions for the deployment of secure and cost-effective optical access networks.

A man with long brown hair is looking at a laptop screen. The image is a close-up, showing his face from the nose up and his hands on the keyboard. The background is a plain, light-colored wall.

# End-to-End Access

## THE CENTILLIUM EDGE

- Technology innovation and industry expertise
- Integration, interoperability and industry standards compliance
- Last mile expertise – DSL, VoIP, Optical
- High performance, end-to-end complete solutions
- Customer-focused – from concept to final test and completion



CENTILLIUM COMMUNICATIONS

the edge in broadband™



## Centillium At-a-Glance

Centillium develops turnkey semiconductor solutions that enable subscribers to access broadband services

- Headquartered in Fremont, CA with a global presence
- Visionary fabless semiconductor company founded in 1997; IPO in 2000 (NASDAQ: CTLM)
- Addressing a growing billion dollar market opportunity
- Innovative semiconductor product portfolio in DSL, VoIP and Optical
- World-class expertise in mixed-signal and analog chips and systems design with state-of-the-art R&D capabilities
- Leadership in integration, interoperability and compliance with industry standards
- Experienced management team

### ABOUT CENTILLIUM COMMUNICATIONS

Centillium Communications, Inc. (NASDAQ: CTLM) is a leading innovator of high performance, cost-effective semiconductor solutions that give consumers, enterprises and service providers the winning edge in broadband access. The company's complete, end-to-end system-on-chip solutions accelerate development time-to-market for "last mile" products with Digital Subscriber Line (DSL), Fiber-to-the-Premises (FTTP) and Voice-over-Internet Protocol (VoIP) technologies. Centillium products include digital and mixed-signal integrated circuits and related software for DSL and FTTP central office and customer premises equipment and VoIP solutions for carrier- and enterprise-class gateways and consumer telephony. Centillium is a global company with headquarters in Fremont, CA. Additional information is available at [www.centillium.com](http://www.centillium.com).

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# DSL... CENTILLIUM GETS YOU FURTHER, FASTER



- Low cost, long reach solution – in excess of 26,000 feet
- Quad ADSL technology delivers up to 50 Mbps
- Only end-to-end ADSL2+ Annex B solution on the market
- Greatest ROI:
  - Significant reduction on system BOM costs
  - Low power/space solutions for high density line cards

## DSL SOLUTIONS FOR LAST MILE SUCCESS

Centillium has long been recognized as the DSL market leader. We are the first provider to offer 12, 24 and 50 Mbps data rates designed to meet the high performance requirements of QoS-based triple play applications such as broadcast services, video streaming, video-on-demand and next-generation gaming services.

With the most deployed, most interoperable solution in the market, we are focused on delivering premium broadband services to end-users across the globe.

## RAISING THE BAR AT THE CENTRAL OFFICE

Our industry leading family of DSL products for the central office includes a full range of high density, high data rate, standards-compliant chipsets, software and reference designs for addressing your unique requirements – no matter where you are in the world.

## DELIVERING THE GOODS TO THE CUSTOMER PREMISE

Service providers worldwide use Centillium products to deliver a whole new generation of premium services, such as VoIP, streaming video, HDTV, video conferencing, interactive gaming and more. With the first complete chipset for DSL, voice and wireless applications, a complete router stack with security and VPN support, and a full suite of applications software and reference designs, we provide quick time-to-market, turnkey solutions for equipment manufacturers.

### Digital Subscriber Line (DSL)

**Pharos™** Centillium's advanced technology delivers the longest reach solution – in excess of 26,000 feet from the Central Office. Spectrally compatible with VDSL2 providing up to 50 Mbps performance today.

**Maximus™ Family** Centillium's eXtremeDSL<sup>MAX</sup> up to 50 Mbps downstream, reaches customers at distances up to 24,000 feet from the central office.

### Palladia™ DSL Router-on-Chip Family

**Palladia 300** The world's only deployed ADSL2/ADSL2+/ADSL2++ delivers data rates up to 50 Mbps.

**Palladia 400** The world's first integrated ADSL2/ADSL2+/ADSL2++ and VoIP Gateway-on-Chip.

**StreetFighter™ DSL Modem** Leverages Centillium's 24 Mbps Double-Spectrum™ technology for ADSL2/2+ modem products.

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## TECHNOLOGY INNOVATIONS FOR THE CENTRAL OFFICE

- First feature-rich, low-power, end-to-end ADSL2+ solution for the world
- Most deployed, most tested ADSL2+ solution in the market; field tested with over 20 services providers worldwide
- Full ADSL2+ solution with advanced features: SRA, dual latency, DRR, DELT/SELT and READSL
- Complete line card solution with off-the-shelf line drivers and network processors
- Efficient power management: L0, L2 and L3 modes

## BREAKING THE BARRIERS AT THE CUSTOMER PREMISE

- First integrated chip for DSL and voice functionality
- Complete router stack with security and VPN support
- Linux, VxWorks and RTEMs
- Complete OS support solution packages available: chipsets, EVM, BOM, schematics and software developers kit
- Flexible and competitive pricing for integrated applications

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# VoIP... READY FOR INSTANT DEPLOYMENT



- Advanced technology for high capacity and extremely low-power designs — up to 10,000 ports per card
- Proven customer roadmap offering strong revenue growth path for OEMs and service providers
- Certified by Tier 1 carrier — AT&T Callvantage — offering fastest time-to-market and best price/performance
- Turnkey, scalable product portfolio offers from 2 to 1,000 channels on a single chip

## CENTILLIUM REVS VoIP — FROM GATEWAY TO MTA

Centillium is front and center in developing new technologies to help service providers rev up their business. Our turnkey solutions for carrier- and enterprise-class gateways and consumer telephony provide complete, out-of-the-box ready resources for quick and easy deployment of high performance VoIP services.

With leading VoIP equipment manufacturers incorporating our Entropia, Palladia and Atlanta into their designs, we are already one of the top VoIP infrastructure chip suppliers. Our Entropia family of products has been rated best performance by the Linley Group.

## TECHNOLOGY LEADER FOR SYSTEM LEVEL SOLUTIONS

Our Entropia family of advanced VoIP processors provides system designers with unprecedented flexibility while delivering an award-winning combination of performance, features and price. We've built highly integrated on-chip hardware and software with DSP+NP+Signaling assist. Our flexible solution fits all networks: TDM, ATM and IP.

## CARRIER-GRADE VOICE QUALITY

Our VoIP family of products link the communications chain all the way into the customer premise, where our VoIP portfolio includes media terminal adapters and the world's only integrated DSL and VoIP with wireless support for cordless phones. Offering the best performance/price ratio, our complete, turnkey carrier grade Voice Services Platform (VSP) solution is certified and deployed by tier 1 carriers like AT&T Callvantage.

Our VSP provides the silicon and software building blocks for telecom, cable and wireless equipment companies to deliver VoIP systems with carrier-quality sound, advanced calling features, enhanced security and routing with faxing capabilities. Our proven, deployed solutions are built on a common software platform to preserve your development investment and time-to-market.

## VOICE OVER INTERNET PROTOCOL (VoIP)

**Entropia™ Family** Highly integrated SoC to address converged TDM/ATM/IP voice network infrastructure. Family of scalable VoIP SoC from 96 to 1008 channels.

**Palladia™ 400** World's first integrated ADSL and VoIP Gateway-on-Chip.

**Atlanta™ Family** Highly integrated Media Terminal Adaptor-router functionality with award-winning VoIP capabilities.

**VSP™** Complete turnkey, carrier-certified VoIP solution for the consumer/retail market.



Centillium's Voice Services Platform (VSP), designed as the consumer electronics industry's first turnkey platform for the development and deployment of carrier-grade VoIP products, was selected as a winner of Internet Telephony magazine's Product-of-the-Year.

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## OPENING THE GATEWAY FOR VoIP SERVICES

- Highest port density with lowest power per port
- One solution for all networks: TDM, ATM, IP
- Technology leader in capacity, density, and power
- Highly integrated on-chip hardware, software: DSP+NP+Signaling assist
- Any Codec, any network system solution
- Ability to support 1,000 VoIP channels on a single, low power chip
- System solution offers faster time-to-market with lower system and development cost
- True TDM replacement and NGN (TDM/ATM/IP) wireline and wireless

## CROSSING THE CHASM TO THE CUSTOMER PREMISE

- Our VSP has exceptional routing performance, Quality-of-Service (QoS) and security features for carrier-grade VoIP CPE products
- Proven VSP technology has been tested, certified and deployed in Tier 1 service providers like AT&T
- Our VSP supports open industry-standard OS and VoIP stacks providing an extremely flexible and powerful development environment
- Complete management and provisioning software for interoperability with softswitches and seamless operation in service provider networks
- Our Atlanta family features a security hardware accelerator, integrated VPN and firewall ensuring optimal security for service providers

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# OPTICAL...THE ULTIMATE IN BROADBAND ACCESS



- Feature-rich SoCs offer highest integration for cost-effective delivery of bundled services like HDTV, video-on-demand and VoIP
- Remote monitoring access enables service providers to monitor the “health” of their networks delivering significant operational savings and network up-time
- Only provider offering complete end-to-end EPON solutions

## TAKING YOU TO THE EDGE OF HIGH BANDWIDTH ACCESS

Broadband is the connection point for delivering next-generation services built on the triple play of voice, data and video. Existing residential networks are unable to keep up with the ever-increasing end-user need for high bandwidth access. As service providers deploy Fiber-to-the-Premises (FTTP) network architecture, they are looking to innovators like Centillium to help meet this demand.

Today, we are the only established System-on-Chip (SoC) provider offering complete, end-to-end, standards-compliant Ethernet Passive Optical Network (EPON) chip solutions for deployment of secure and cost-effective next-generation optical access networks.

## UNLIMITED ACCESS

With increased functionality, smaller footprint and low power consumption, our SoCs boast the highest integration for delivery and control of bandwidth for today's bundled services including HDTV, video-on-demand, VoIP and next generation demands.

Our chipsets combine innovative mixed-signal ICs with sophisticated multi-platform software to enhance capabilities and reduce costs of optical networking equipment being deployed in central offices and customer premises. For top-of-the-line security, our SoCs support multiple authentication and encryption schemes.

## WHEN WE SAY "END-TO-END," WE MEAN IT

Our product portfolio is unrivaled in its scope, with an end-to-end offering of PON ICs that provide physical layer and protocol layer solutions for the widest range of Central Office (CO) and Customer Premises Equipment (CPE) applications.

For the physical layer, our optical transceiver chips are designed to control bi-directional burst-mode traffic on fiber on both the CO and CPE sides, providing truly integrated solutions for PON applications. Delivering the highest performance, lowest cost, smallest footprint and embedded diagnostics, they enable service providers to achieve savings in design, manufacturing, inventory and testing.

Our protocol layer solutions include a mixed-signal EPON protocol engine and bridge for CO-based optical line termination, as well as an EPON protocol engine for CPE-based optical network units. Centillium Optical solutions are compliant with the latest industry standards, including IEEE 802.3ah. The family is comprised of a range of broadband service processors combining a network processor, a powerful DSP voice engine and IP security. Each offers a host of physical interfaces to support VoIP, virtual private networks and wireless networking.

## Fiber-to-the-Premises (FTTP)

**Zeus™** Transceiver Chipset – Enables control of bi-directional burst-mode traffic on a fiber cable on both the CO and CPE sides for EPON, BPON and GPON applications.

**COLT™** Optical Line Termination (OLT) family – Highly integrated, mixed signal System-on-Chip solution for EPON CO applications.

**Mustang™** Optical Network Unit (ONU) family – Highly integrated mixed signal System-on-Chip solution for EPON CPE devices.

**Atlanta™** Combines network processing with a powerful DSP voice engine and signaling for VoIP applications, optimized for PON deployments.

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