High-Speed Analog Semiconductor Solutions
Addressing Bandwidth Bottlenecks

The proliferation of mobile devices and wireless connectivity is driving growth in demand for network bandwidth as users seek faster access to high-definition video and multimedia content and applications. The emergence of cloud computing, which allows multiple users to simultaneously execute applications and access data at high speeds, is creating additional demand for network bandwidth and computing resources.

Inphi Corporation is a leading provider of high-speed analog semiconductors for communications and computing products. These semiconductors provide high signal integrity at leading-edge data speeds while reducing system power consumption.

More than 80 percent of Internet traffic goes through Inphi products¹, which are designed to address bandwidth bottlenecks in networks, minimize latency in cloud computing environments and enable the rollout of next generation communications infrastructure. The company’s product portfolio with 17 product lines and more than 170 products serve three main markets – Networking and Communications, Computing and Storage and Multi-Markets for Test and Measurement, Military and Aerospace.

Inphi’s semiconductors provide a vital high-speed interface between analog signals and digital information in high-performance systems such as telecommunications transport systems, enterprise networking equipment, data center and enterprise servers, storage platforms, test and measurement equipment and military systems. By leveraging its core competencies in system-level simulation, advanced analog circuit design, signal integrity, power management, packaging and process technologies, as well as its industry relationships, Inphi has taken a leadership role in the markets it serves.

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¹Source: Based on Inphi share for 10G port type shipments for 2010 per Ovum, and Inphi management estimates for 40G and 100G
## Products and Technology

### Milestones

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<th>2006</th>
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<td>Launched World’s Fastest Track-and-Hold Devices</td>
<td>DDR3 Register Control Device is First to Exceed JEDEC Specifications</td>
<td>Introduced 40G/50G HSL 20G Multiplexer</td>
<td>Introduced 100G coherent TIA and Highest Sensitivity 40G Linear TIA</td>
<td>Industry’s First JEDEC-Compliant iMB and First 100G Coherent TIA</td>
<td>Unveiled iPHY CMOS SerDes Architecture</td>
<td>Industry’s First TIA for Reconfigurable Colorless Networks</td>
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In order to handle growing network bandwidth and faster computing speeds, communications and computing systems require greater processing resources and higher access speeds. As processing power and access speeds continue to increase, it becomes more difficult for systems to achieve high signal integrity and reliable data transmission and recovery using traditional semiconductors. Moreover, in many networks and computing systems, bandwidth bottlenecks arise where the physical media and traditional semiconductors are incapable of supporting the increased data transfer rates and cause signal deterioration. These signal deterioration issues are typically addressed with high-speed analog semiconductors that maintain or improve signal integrity at every point of the physical interface by employing sophisticated analog signal processing techniques to accurately generate, amplify, reshape, rettime and receive the transmitted data.

Inphi leverages its proprietary high-speed analog signal processing expertise and deep understanding of system architectures to address data bottlenecks in current and emerging communications, enterprise network, computing and storage architectures. Its core technology strength in high-speed analog design enables customers to deploy next generation communications and computing systems that operate with high performance at high speeds. Inphi is at the forefront of developing semiconductor products that deliver 100G speeds throughout the network infrastructure, including core, metro and the data center. In addition, the company’s analog signal processing expertise improves throughput in computing systems.

### High-speed analog products for networking and communications applications

To help meet the burgeoning demands for broadband network traffic, Inphi develops broadband analog components that are designed into routing, switching and optical transport networking equipment, providing critical connections between the optical and electrical systems. With their ultra-broadband capabilities and high signal integrity, Inphi’s high-speed analog components enable telecommunications carriers to deploy 40G and 100G networks.

### Memory interface products for enterprise computing and storage applications

Inphi offers system architecture knowledge and components that address data bottlenecks in current and emerging systems architectures. Inphi’s components enable data center servers to operate at greater speeds with greater memory capacity, more efficiently. Today, Inphi is a leading supplier of memory interface components for DDR2, DDR3, and LRDIMM memory modules.

### Test & measurement, military and aerospace products

With its leading-edge analog design, Inphi’s products for test and measurement enable the development of next generation testers for emerging or new applications, such as 100G Ethernet and 100G Coherent Detection. In military markets, Inphi’s products enable next generation signal acquisition systems based upon high-speed monobit receiver architecture. For these markets, Inphi’s products include 10G and 50G logic gates retimers, fanout buffers, MUX, DEMUX and latched comparators.

### Industry Collaboration

Inphi has ongoing, informal collaborative discussions with industry and technology leaders to design architectures and products that solve bandwidth bottlenecks in existing and next generation communications and computing systems. Inphi helps to define industry conventions and standards within the company’s target markets by collaborating with technology leaders, original equipment manufacturers and standards bodies such as JEDEC Solid State Technology Association, the global leader in standards development for the microelectronics industry and the Optical Internetworking Forum (OIF), the first industry group to unite representatives from data and optical networking disciplines.