

Banpil awarded more interconnect patents in 2011: Interconnects patent portfolio exceeds twenty and ready to license to system vendors for next generation low-power and high-speed application development

Banpil Interconnects deliver >40G per channel and consumes less than one-tenth the power of conventional interconnects

SANTA CLARA, Calif., September 15, 2011 -- Banpil Photonics, Inc., a leading company in expanding the boundaries of optics and electronics through innovations, today announced that it has been awarded more patents in year to date 2011 that covers its high-speed metallic (electrical) interconnects technology, on the heels of its record-making year 2010.

The latest patents issued include four for electrical interconnects and one for optical, bringing the total number to twenty patents in the company's overall interconnects patent portfolio, which now includes 15 electrical and 5 optical interconnects, making up its high-speed interconnect platform technology. Banpil also holds more than three dozen issued or in process patents in its entire portfolio.

The awarded patents provides for fundamental interconnect systems for connecting high-speed electronics elements. The interconnect systems consists of various signal lines, dielectric systems with novel structures to reduce dielectric loss. The interconnect systems can be used for on-chip interconnects as well as for off-chip interconnects. The fundamental techniques can also be applied to high-speed connectors and high-speed cables.

Banpil has already demonstrated the implementation and superior performance of its patented technology. In 2007 the company verified 20 Gb/s per channel on a 3-meter long flexible-printed-circuit (FPC) and 40 Gb/s per channel over 1-meter FPC. Earlier in 2006 Banpil demonstrated 10 Gb/s signals over a 1.5-meter long rigid FR4 printed circuit board (PCB) and 20 Gb/s on a 1-meter long FR4-PCB. The remarkable channel efficiency of Banpil's metallic interconnects in both conventional LF-FPCs and FR4-PCB make it possible to increase signal-carrying capacity by more than 6 times over conventional solutions, while significantly reducing power consumption.

Banpil interconnects consume a remarkable one-tenth of the power that conventional electrical interconnects utilize. Scaled to data center terms, this means a 50,000-square-foot data center which uses approximately 4 Megawatts of power would require less than 400 kilowatts to directly power its server farms by implementing Banpil interconnects. This is a timely achievement when energy conservation and environmental awareness is becoming a factor that companies need to pay attention to along with the benefits technologies deliver to society.

"We are extremely pleased and proud to obtain these new patents. We have already shown the significant performance enhancements that our high-speed metallic interconnects are capable of providing," said Dr. Achyut Dutta, Banpil's CEO. "The patents issuance and addition to our portfolio will allows us to now more readily work with other technology companies in joint R&D to develop next generation applications or

to license our interconnect portfolio for their own high-speed application product development. Our significant breakthroughs in interconnects will provide licensees and partners a sustainable competitive advantage because ours are both purely electrical solutions requiring significantly less power to drive the signal over long, practical application-length interconnects. Implementing Banpil interconnects will help to significantly increase signal speed and reduce system power consumption."

The FR4-based PCB and FPC market combined is estimated to exceed \$80 billion by 2010. The market is growing steadily worldwide and part of that is driven by flex replacing rigid PCBs in some cases according to Frost & Sullivan.

Banpil's innovations are major contributions toward the dual interconnect challenge of bandwidth performance and power efficiency in next-generation high-speed systems. Power efficiency is critical for system motherboards in computing, communications, and networking equipment. Banpil's interconnects can be used in servers and PC chipsets to connect on-board chips reducing power consumption by more than 80% compared to conventional solutions and eliminating the need for additional cooling. Banpil Flex can also replace optical interconnects used in board-to-board and rack-to-rack connections resulting in an even greater power reduction.

Examples of next-generation applications that require high-speed include real-time gaming on high-performance consoles over the Internet, wireless smart phones or other handheld devices capable of on-demand video and ultra-high broadband Internet connections, and High Definition TVs (HDTVs) that are slim and compact. The need for high-speed interconnects goes hand-in-hand with the need for higher speeds of data transfer in supercomputers and other computer systems that process large amounts of information in high-performance computing, and communications equipment.

Banpil has made sample-level high-speed FPC and rigid FR4-PCB products available for demonstration. The company welcomes opportunities to work with system vendors to explore new or enhanced applications. Banpil is also actively seeking licensees, strategic partnerships with both rigid PCB and FPC manufacturing, and investors.

About Banpil Photonics, Inc.

Banpil Photonics develops and licenses fundamental technology expanding the boundaries of optics and electronics. The company has developed an extensive IP portfolio of high-speed interconnects, multispectral image sensors, and high-efficiency photovoltaic technologies. Banpil innovations enable the development and manufacture of new generations of low-cost, high-speed electrical interconnects for chip-to-chip, chip-to-board, board-to-board, and rack-to-rack applications; multispectral image sensors for automotive & medical imaging, mobile, security, remote-sensing, and communication applications; and photovoltaic technology for solar cell applications. For more information, visit www.banpil.com.

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