

Banpil granted two new patents: Electrical interconnects patent portfolio grows to five and ready to license to system vendors for high-speed and low power system development

Banpil Interconnects consumes less than one-tenth the power of conventional interconnects

SANTA CLARA, Calif., September 8 -- Banpil Photonics, Inc., a leading company in expanding the boundaries of optics and electronics through innovations, today announced that it has been awarded two new patents that cover its metallic (electrical) interconnects technology.

The latest patents are the second and third for electrical interconnects, bringing the total number to five patents in the company's overall interconnects patent portfolio, which also includes two optical interconnects, making up its high-speed interconnect platform technology. Banpil also holds more than two dozen issued or in process patents in its portfolio.

Banpil has already demonstrated the implementation and superior performance of its patented technology. In 2007 the company verified 20 Gb/s on a 3-meter long flexible-printed-circuit (FPC) and 40 Gb/s 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 two 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 allow 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. Frost & Sullivan Industry Analyst Dr. Jayson Koh noted, "PCBs face severe limitations as the demand for high-speed systems of over 10 Gb/s continues to grow. Banpil's interconnect technology, with its unique capability to increase

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significantly (by >6 times) signal-carrying capacity while reducing signal loss, is projected to increase bandwidth to as high as 40 Gb/s in the future." Dr. Koh added that "the breakthrough of Banpil FPC is capable to replace current low-speed and high-speed applications of rigid PCBs with additional benefits of enabling lighter, smaller form factor, flexible, faster, and increased system power performance functionality, which reduces costs to end users."

On Banpil's rigid interconnects, Gary McCormack, Product Line Director of Data Interconnects at Vitesse said "Banpil's next generation high-speed electrical interconnects FR4-PCB makes 11 Gb/s backplane designs of up to 1.5-meters a reality."

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.

Further more, Banpil's interconnect technology will help prolong FR4 usage in PCB boards, and manufacturing processes over the next 20 years. FR4-based PCB is very mature and difficult to replace. Banpil anticipates its technology and fabrication techniques will help maintain PCB manufacturing costs comparable to today's FR4-PCB.

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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