GSI Technology's Gemini-I® APU Showcased in "In-Memory Acceleration for Big Data"

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The Linley Group Publishes Whitepaper on Gemini® APU

SUNNYVALE, Calif., July 21, 2020 (GLOBE NEWSWIRE) -- **GSI Technology, Inc. (Nasdaq: GSIT)**, a leading provider of high-performance memory solutions for the networking, telecommunications and military markets, and developer of the Gemini® Associative Processing Unit (APU), announces the publication of the whitepaper "In-Memory Acceleration For Big Data" by The Linley Group, the industry's leading source for independent technology analysis of semiconductors.

The Linley Group whitepaper provides an overview of the Gemini APU's unique, patented technology, its advantages over other processors, and provides examples of its performance. The Gemini APU is based upon a new processor architecture that combines memory and compute units on a single chip, which is optimized for large amounts of data. GSI has demonstrated Gemini's performance in similarity searches run on datasets as large as one billion records. A unique benefit of Gemini's design and software capabilities allows linear scalability to manage 40 billion records and beyond by combining multiple systems with multiple cards. Gemini delivers performance orders of magnitude better than a single processor with cost and power savings relative to the number of other types of processors required to match its performance.

Lee-Lean Shu, Chairman and Chief Executive Officer of GSI Technology, commented, "As a leading expert in the semiconductor industry, the Linley Group's analysis of the Gemini APU expands the visibility and awareness of our revolutionary technology, and supports our sales activities. Companies are increasingly analyzing vast data sets to enhance business outcomes, increase security and surveillance, and improve R & D returns. Gemini's outperformance in searching large datasets is optimal for multiple applications, from image-recognition and drug discovery to e-commerce, natural-language processing, and visual search. We look forward to participating in The Linley Group's Fall Processor Conference this October."

Linley Gwennap, principal analyst at The Linley Group and editor-in-chief of Microprocessor Report, commented, "GSI Technology's advanced processor architecture allows businesses to keep pace with the need to analyze large datasets, which are rapidly growing and seeing broader applications across industries. By specializing its design and dividing the computation among many small cores, Gemini easily outperforms other types of processors."

Gemini APU's patented design includes millions of processors that can load data directly from the on-chip memory. This unique design intersperses more than two million small processing units among 48 million memory cells, dividing this memory into enough subunits to feed each processor, thereby allowing for much higher data flow. As a result, Gemini outperforms standard processors by 100x or more on big-data workloads while reducing power by 70%.

The table below, which was excerpted from The Linley Group whitepaper, shows that the APU's memory bandwidth exceeds other processors, allowing it to quickly analyze large datasets, and lower total power dissipation (TDP), which reduces total cost of ownership.

	Gemini APU	Xeon 8280	Nvidia A100	Graphcore
Compute Cores	2 million x 1 bit	28 x 2x512 bits	104 x 4,096 bits	1,216 x 64 bits
Compute Speed	400MHz	2.7GHz	1.4GHz	1.6GHz
Peak Compute*	25 TOPS	10 TOPS	75 TOPS	16 TOPS
On-Chip Memory	12MB L1	38.5MB L3	40MB L2	300MB L1
Mem Bandwidth	26 TB/s	1 TB/s	7 TB/s	16 TB/s
Power	60W TDP	205W TDP	400W TDP	150W TDP

*Trillions of 8-bit ADD operations per second (TOPS). (Source: vendors)

The whitepaper, released on July 17, 2020, explains the Gemini APU technology in detail and how it might apply to various applications. GSI Technology sponsored the whitepaper, but the opinions and analysis are those of Linley Gwennap and his team of analysts.

To view the whitepaper "In-Memory Acceleration for Big Data" by Linley Gwennap, Principal Analyst at The Linley Group, visit the GSI Technology website at https://www.gsitechnology.com/In-Memory-Acceleration-for-Big-Data. Subscribers to The Linley Group can access the whitepaper on their website at www.linleygroup.com.

ABOUT GSI TECHNOLOGY

Founded in 1995, GSI Technology, Inc. is a leading provider of semiconductor memory solutions. GSI's resources are currently focused on bringing new products to market that leverage existing core strengths, including radiation-hardened memory products for extreme environments, and Gemini, the APU designed to deliver performance advantages for diverse artificial intelligence applications. GSI Technology is headquartered in Sunnyvale, California and has sales offices in the Americas, Europe, and Asia. For more information, please visit www.gsitechnology.com.

About the Linley Group

The Linley Group is the industry's leading source for independent technology analysis of semiconductors for a broad range of applications including networking, communications, data-center applications, mobile, and embedded. The company provides strategic consulting services, in-depth analytical reports, and conferences focused on advanced technologies for chip and system design. The Linley Group is the publisher of the noted Microprocessor Report, a weekly publication. For insights on recent industry news, subscribe to the company's free email newsletter: Linley Newsletter.

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