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Marvell Broadens Leadership in Printer Industry by Delivering Breakthrough 64-bit Dual-Core SoC Platform

Marvell's 64-bit dual-core 88PA6220 SoC in 28nm process technology delivers breakthrough price/performance for mainstream products by delivering unprecedented integration with over 140 ppm PDL rendering, robust security, advanced connectivity, industry-leading low power, and a 3D GPU for stunning display capabilities

SANTA CLARA, Calif., March 28, 2016 /PRNewswire/ -- Marvell (NASDAQ:MRVL), a world leader in storage, cloud infrastructure, Internet of Things (IoT), connectivity and multimedia semiconductor solutions, today announced its most advanced mainstream printer system-on-chip (SoC), the Marvell® 88PA6220. This 28nm SoC delivers breakthrough performance at a low system cost by integrating a dual-core ARM® Cortex® A53 (64-bit) processor running at 1.0GHz, dual-channel configurable scan and print pipelines, a high-performance 2D/3D GPU, and an integrated GE Ethernet MAC and PHY. The 88PA6220 also introduces Marvell's revolutionary modular chip (MoChi™) architecture into the Printer SoC family, extending the I/O capabilities of the 88PA6220 through the growing portfolio of Marvell connectivity and expansion solutions. As the industry leader in printing SoCs, Marvell's 88PA6220 sets a new standard for mainstream performance with over 140 pages per minute (ppm) page description language (PDL) rendering. Additionally, the printer SoC rounds out Marvell's Printer product line at a price/performance point below the recently announced 88PA6270, a high performance Quad-Core SoC for the enterprise Printer/MFP market. These advancements further establish Marvell's printer technology leadership and reflect its commitment to driving the industry forward with new capabilities, lower solution cost, and the fastest time-to-market.

The 88PA6220 will power some of the industry's fastest and highest quality mainstream multi-function printers (MFPs) and copiers supporting a variety of printing technologies, including ink, laser, and LED technologies. The 88PA6220 Development Kit includes a hardware evaluation board and shares the same Software Development Kit (SDK) with the 88PA6270.

"The 88PA6220 joins Marvell's market-leading family of printer SoCs, establishing new performance and integration standards for the entire industry," said Mark Montierth, Vice President and General Manager, Custom and Computing Solutions Business Unit at Marvell Semiconductor, Inc. "Packed with advanced features and unprecedented system integration, the 88PA6220 reflects Marvell's strong commitment to maintain market dominance and enable continued innovation for our printer customers. The integrated PCIe, USB3, and new 8Gb/s per lane MoChi interfaces are powerful expansion features that enable a single printer

platform to extend across a broad range of products and give our customers confidence in the 88PA6220's abilities to meet their needs now and in the future."

The 88PA6220 Development Kit includes a fully tested hardware development environment, complete Linux Software Development Kit, detailed documentation and application notes, reference designs, a full family of wireless connectivity solutions, power management ICs, consumables security system, and code security system. This kit enables customers to easily develop complete, full-featured, high-performance and cost-effective products.

The 88PA6220 sets a new standard for performance in the printer industry:

- 28nm LP process technology
- Dual-core ARM Cortex A53 (ARMv8 64-bit) processor with a 256KB L2 cache
- Page processing speeds of over 140 pages per minute, as measured with Global Graphics® PDL interpreters and the J11.ppt industry standard performance test file rendering 600 dpi color pages
- Dedicated dual-channel imaging hardware pipeline. The pipeline is configurable but always runs at a blazing fast 200MPixels/second.
- 2x JBIG codec + 2x JBIG decoders +1x JPEG codec
- Hardware blocks for image sensor error calibration and correction, image quality optimization, compression/decompression, and native support for dual sided scanning and copying
- A powerful Vivante® GC400LT GPU provides fast, smooth 2D/3D graphics support
- Three additional 32-bit ARM CPUs for user customization, real-time mechanism control, low power standby and co-processor functions
- Dedicated Direct Engine Control hardware (DEC) provides real-time control of critical printer functions such as laser video signals or LED arrays, laser scanners, fusers, motors, sensors, and CIS scanner controls

MoChi technology: A new level of design flexibility

Marvell's MoChi technology, and growing family of MoChi Southbridge chips, provides product designers with unprecedented product design flexibility. As new I/O standards emerge, new Southbridge chips are added to the family and can be adopted by OEMs with the 88PA6220. Marvell's MoChi architecture is designed to save cost, offering scalable features targeted at different price points.

Designed to deliver a complete solution:

- Built-in security hardware to authenticate and monitor consumables, the 88PA6220 works seamlessly with Marvell's PA810, an advanced and cost-effective consumable security chip
- Platform and SDK support for 802.11a/b/g/n/ac, NFC, 802.3 (GigE), and Bluetooth 4.0 advanced connectivity

Advanced Integrated Connectivity:

- Expandability and scalability to adopt new connectivity through Marvell's MoChi technology
- 1x1 PCIe
- 2xUSB2.0, 1xUSB 3.0
- GbE Networking, including Marvell's advanced PHY

- 3xSerial Control Channel Processors (SCCP). Each SCCP interface is programmable to emulate industry-standard serial interfaces or customer unique serial protocols.
- Multiple eMMC/SDIO, SPI, UART, I2S,SPI, OWI, ADC and Audio DDACs
- LCD support through parallel or LVDS

World-class security system including:

- Hardware authentication, encryption and decryption for industry standards protocols such as: AES, 3DES, RC4, SHA256, SHA1, and MD5.
- Chain of trust for secure boot
- Hardware support for Marvell PA810 Consumable Security Chip
- Hardware Currency Detection

Low Power Operation:

- 28nm LP process technology
- Power islands and clock gating to minimize power consumption
- Intelligent activity monitoring
- Exceeds demanding requirements of ENERGY STAR® and other regional low power standards

The 88PA6220 further extends Marvell's broad family of printer SoCs which now includes the 88PA6270, 88PA6220 and 88PA6110. It is sampling to customers now and will be in production by the fourth quarter of 2016.

For further information about Marvell's 88PA6220 and the rest of the Marvell Printer SoC family, visit:

http://www.marvell.com/printers/. For further information about Marvell's MoChi™ technology, visit: http://www.marvell.com/architecture/mochi/.

About Marvell
Marvell (NASDAQ: MRVL) is a global leader in providing complete silicon solutions and Kinoma® software enabling the "Smart Life and Smart Lifestyle™." From storage to cloud infrastructure, Internet of Things (IoT), connectivity and multimedia, Marvell's diverse product portfolio aligns complete platform designs with industry-leading performance, security, reliability and efficiency. At the core of the world's most powerful consumer, network and enterprise systems, Marvell empowers partners and their customers to always stand at the forefront of innovation, performance and mass appeal. By providing people around the world with mobility and ease of access to services adding value to their social, personal and work lives, Marvell is committed to enhancing the human experience.

For more information, please visit www.Marvell.com.

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To view the original version on PR Newswire, visit:http://www.prnewswire.com/news-releases/marvell-broadens-leadership-in-printer-industry-by-delivering-breakthrough-64-bit-dual-core-soc-platform-300241716.html

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