

**4,000 PATENTS.
OVER 70,000 COLOR JETS.
GROUNDBREAKING SOFTWARE.**



MEMJET TECHNOLOGY BRIEF

MEMJET IS A NEW GENERATION OF COLOR PRINTING TECHNOLOGIES THAT PROVIDE REMARKABLE SPEEDS AND AFFORDABILITY.

Memjet technologies power fast color printers for industrial and commercial markets, as well as the business office. How fast? Production Class label printing systems powered by Memjet run at 32 inches per second (ips) while office printers deliver blazing speeds of 60 pages per minute (ppm), easily the fastest on the planet.

BREAKTHROUGH PRINthead TECHNOLOGY.

Memjet does not make printers. We provide printheads, ink, controller chips and software to original equipment manufacturer (OEM) partners across the printing industry, the same way leading-edge chipmakers supply OEMs across the smartphone, tablet and personal computing industries. Memjet holds more than 4,000 global patents for color printing technologies, with 2,000 more pending.

We're creating a whole new category of printing. Because we're creating a whole new category of printing. Memjet technologies make possible an amazingly fast, affordable and efficient digital color printing system that combines revolutionary page-wide printheads with a controller chip, software and ink. Memjet printheads are unique in their appearance as well as in their design and functionality. Unlike traditional inkjet technology, Memjet printheads don't scan back and forth across the page. They also require less electricity than a toner-based laser printer. These advances make Memjet-powered color printers faster, more affordable and more energy efficient than other printers.

The same robust, durable printer components Memjet provides to industrial and commercial OEM partners are used in office printers sold at retail.

MEMJET PRINtheADS

Memjet technologies put more than 70,000 ink nozzles on a printhead—17 times the nozzle density of traditional inkjet printheads. This breakthrough design gives Memjet printheads the power to deliver 1600 x 800 dpi-quality at 60 ppm and 12 ips.

The Memjet page-wide printhead is less than 9 inches wide (222.8 mm) and designed to fire more than 700 million drops of ink per second. It features five-color ink channels (CMYK) that can be configured with different combinations for various market needs. In addition to single printhead applications, the printheads have been deployed for wide format printing systems (five printheads wide), and production-class systems (five printheads in succession) to fire more than 3 billion drops of ink per second for commercial and industrial jobs.

Fast speeds and quality output of Memjet-powered printers and printing systems can be achieved simultaneously thanks to the Memjet printhead's nozzles, which fire ink with pinpoint precision, achieving full coverage of a single page (A4 or letter) or comparable media/substrate in a single second. Each nozzle's diameter is smaller than the width of a human hair. The Memjet printhead is produced through microelectromechanical systems (MEMS) technology, which enables the mass production of "miniature machinery" and is the inspiration for the name Memjet.



PRINTHEAD AT-A-GLANCE

- Printhead with 8.77 inch (222.8 mm) printable width
- Prints 6 inches (152mm) per second or 12 inches (305mm) per second
- True 1,600 dots per inch
- 11 Integrated Circuit (IC) Chips
- 70,400 nozzles (6,400 per IC Chip)

CUSTOM ASICS

Memjet's custom controllers provide a powerful development platform for OEMs. All Memjet controllers include Memjet's high-speed print pipeline that runs on dedicated hardware and is optimized to achieve Memjet's 60 ppm /12 ips speed continuously. Whether leveraging single-function capabilities, adding and customizing modules, or porting existing firmware architectures, Memjet's controllers are designed to optimize performance, streamline development processes and reduce overall controller board costs by maximizing controller-chip-based functionality.

CONTROLLER OVERVIEW

- 32 bit RISC controller
- 648 MHz CPU
- 2.6+ million logic gates and fast, flexible memory options
- Integrated Memjet 60 ppm or 12 ips pipeline
- Integrated networking and USB support
- Extensive user interface and motor control elements
- Software development kit and tools available to OEMs

MEMJET SOFTWARE

Memjet's software modules include end-user applications such as printer drivers, installers, usage-tracking and error-reporting modules, as well as other manufacturing, service and management modules. All applications are written in ANSI C/C++ and provide a well-defined set of common operating system interfaces and OS-independent code for OEM brands to leverage and customize.

MEMJET FORMULA INK

Memjet inks are proprietary, water-based, four-color (CMYK) ink formulations, customized to work in conjunction with Memjet printheads. While water-based inks are common in the office and home printing market, Memjet inks are unique to meet the demands of high-speed drop ejection and single-pass printing for commercial and industrial markets, and to ensure reliable, high-quality color printing for the life of the printhead.

AVAILABILITY

Memjet's technologies are commercialized and available through several OEM partners globally. The end-user base for Memjet-powered printers will continue to expand rapidly in 2012 with OEM partner launches across the industrial, commercial and office markets.

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