

Down the Road  
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This recurring column is intended to offer information on technologies that have recently appeared or will soon be in the marketplace, and those that are further “*Down the Road*”.

### **Staying Cool**

If you remember those high school science and physics classes you will probably remember most metals conduct heat better than air or water.

Assuming the above is true, a Danish company, Danamics, set about finding a way to use metal to cool CPUs (CPU – Central Processing Unit – the computer’s “brain”). Not just any metal, but a liquid metal, in their model LM10 cooler. The type of metal is currently undisclosed.

The LM10 uses what appears to be a clamp-on heat sink consisting of a CPU contact plate with integrated heat pipes that rests atop a CPU. The heat pipes are connected to a “multi-string” electromagnetic pump, which pumps the liquid metal to heat radiating fins and then back to the CPU contact plate. The electromagnetic pump requires no moving parts, no external housings – and unlike water cooling systems – no reservoirs.

Time to marketplace – currently no announced dates.

### **Motorola’s Microvision Group Offers a Pico Projector**

Most people know that a pico anything means small. Mathematically a pico is one trillionth of whatever you are describing. As an example, a picosecond is  $10^{-12}$  seconds. Microvision chose to call their new very small projector a Pico Projector.

The projector is called *Show*, is about the size of a typical PDA and will run on batteries for about 2.5 hours. Under the hood are four main elements. They are:

- Electronics
- Three laser diodes (Red, Green and Blue)
- Optical combiner
- Micro electromechanical scanning mirror (ala Texas Instruments’ DLP chip)

The electronics accept the information to be displayed and convert it into the format needed to feed the RGB lasers. The lasers output is sent to the optical combiner that combines the individual color streams into a single composite color beam. The combined beam is sent to the scanning mirror which then “paints” the image, pixel by pixel and line by line, on any display surface.

The projected image is 848 x 480 pixels. The image size varies from 12 to 100 diagonal inches, depending upon the distance to the display surface. The company says the engine proper is about 5 cubic centimeters in volume, small enough to be embedded in devices such as cell phones, digital cameras, media players and other mobile devices.

Time to marketplace – 2009

### **Organic Light Emitting Diode (OLED) Printer**

Seiko Epson Corporation reports that they have successfully developed a high brightness OLED – based print head. Most current printers use LEDs or lasers as their light source.

Seiko Epson partnered with Japan's Sumitomo Chemical Co Ltd. – a joint venture partner of Cambridge Display Technology in the U.K. – to supply the special polymers used in fabricating the head.

Seiko Epson believes this breakthrough could result in the use of these new OLED polymers in copiers and scanners as well as in a new range of smaller, higher resolution and faster color printers.

Time to marketplace – No announced dates