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Junko Yoshida

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**Think Silicon**



Think Silicon's Nema p (pico) is designed to build 2D display applications

In connected IoT devices, small is beautiful and ultra-low power is essential.

Think Silicon, a startup in Patras, Greece, showed off what it calls "the world's most power-efficient GPU," designed specifically for ultra-low power IoT, wearable and embedded devices supporting small displays.

Called Nema, its GPU saves power by using 6:1 frame buffer compression and a 4:1 software library (down to about 20Kbytes) compression. This combination allows Think Silicon's GPU to eliminate the use of external memory.

The result is a 100-percent battery life increase, according to the company. Used in a wearable device like a smart watch, the battery can last three to six days. The die size of the Nema GPU is small -- about 0.1mm<sup>2</sup>, which results in less leakage, the company said. Nema comes in two flavors. Nema p (pico), the smallest 2D GPU in the industry, is designed to build 2D display applications starting from 1.5 inch to 6.0 inch screen size and resolution up to XGA (1024 x 768).

Nema t (tiny), which the company describes as "the smallest 3D GPU in the industry," is for building 3D display applications starting from 1.5-inch to 6-inch screen size with resolution up to 720p (1280 x 720).

The host CPU working with Nema GPU doesn't need to be a

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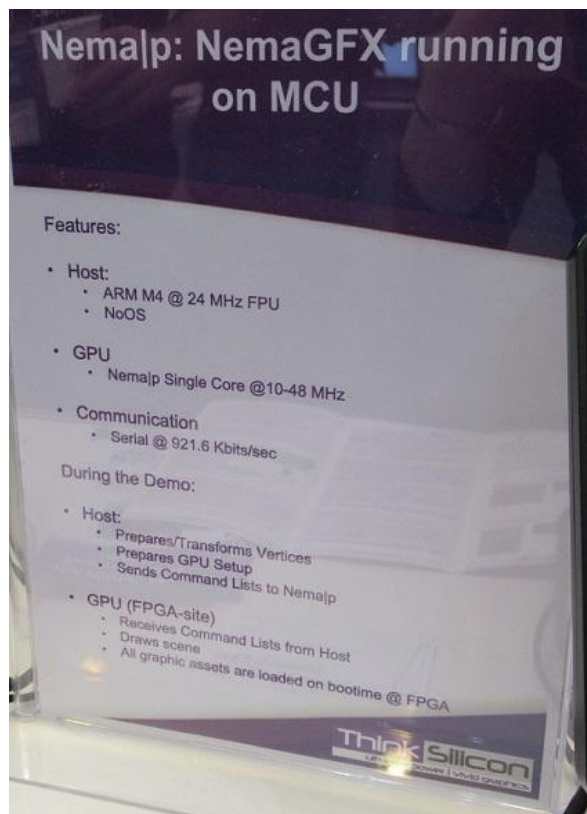
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microprocessor. "We can work with ARM M0 to M4," said Ulli Mueller, Think Silicon's vice president, business development & marketing.



Nema's spec

Why is Think Silicon located in Greece? It turns out that's where Atmel's co-founder George Perlegos came from. The region has become a small enclave of technologists. The company's 25 people include experienced graphics engineers, including Mueller, who worked at ATI Technologies Inc. and served as a director in Hauppauge Computer Works Inc., Germany.

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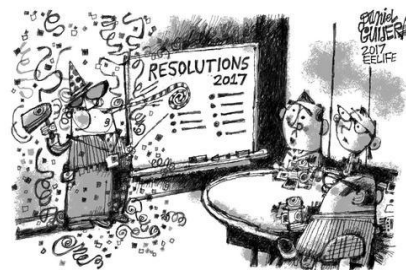
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