



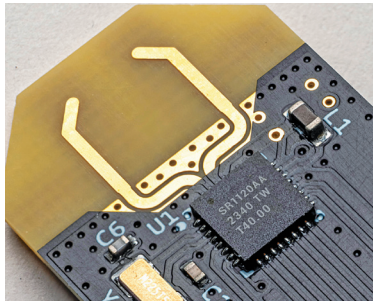
TRULY INNOVATIVE ELECTRONICS

INNOVATION UPDATES

Amongst numerous press releases of new products received by us, these are the ones we found worthy of the title *Truly Innovative Electronics*

Ultra wideband transceiver

SPARK Microsystems' SR1120 ultra wideband (UWB) transceiver addresses a challenge in wireless design by delivering low-power, low-latency data



with robust interference resistance. The transceiver doubles data throughput versus Bluetooth to 40.96Mbps, 20 to 40 times faster, while using about 25 times less power and reducing latency by 60 times, and it keeps the advantages over Wi-Fi. It also supports ranging at about 100 times lower power than other UWB solutions, all within a cost-efficient design. Compared with its predecessor, the SR1120 extends range by about 50 per cent. These changes allow new uses in gaming, edge AI, audio, and IoT applications, including industrial systems, robotics, and medical devices, and prepare body area networks to handle the data needs of implantable sensors and real-time neural activity transmission.

SPARK Microsystems
<https://www.sparkmicro.com>

System-on-chip

Ambiq Micro's Atomiq is a system-on-chip that lets devices run AI continuously at the edge without draining battery or adding heat. It uses sub- and near-threshold voltages to keep power low while still handling demanding tasks through its ARM Ethos-U85 NPU, which supports on-device computer

vision, speech recognition, and sensor processing. Dynamic power scaling adapts energy use to workload, making

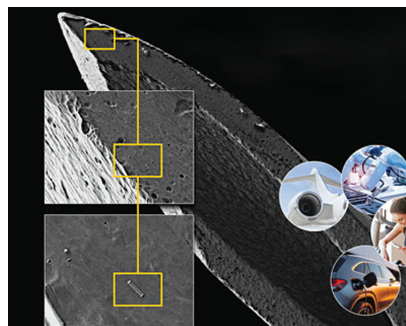


always-on AI practical for small, battery-powered devices. This approach opens possibilities for smart cameras and security systems that recognise objects in real time, AR glasses and wearables with voice interfaces, and industrial or robotic systems that analyse data locally instead of relying on the cloud.

Ambiq
<https://ambiq.com>

Nanoscale temperature and force sensors

Sensors from Digid measure temperature and force at scales down to 1µm, with the company targeting future versions at 10nm, for use in areas such



as physical AI and humanoid robotics, where tactile and thermal feedback limits machine interaction. The sensors can be printed as arrays directly onto surfaces, allowing machines to detect touch and temperature closer to human sensing, and the same

devices can be used for force sensing on surgical scalpel blades, temperature measurement at the tips of probes, thermal monitoring inside battery cells, and biosensing tasks such as detecting viruses or chemical markers in the bloodstream. Digid says the sensors produce little self-heating, provide linear measurements, and remove the need for drift compensation and digital overhead found in conventional sensors.

Digid
<https://www.digid.com>

AI vision system-on-chip

The CV7 edge AI vision system-on-chip (SoC) from Ambarella, Inc. is designed for AI perception workloads across consumer, enterprise, industrial,



and automotive systems, supporting use cases such as 8K action and 360-degree cameras, multi-imager security cameras, drones, robotics, industrial automation, video conferencing, and automotive platforms, including AI vision gateways, fleet video telematics, surround-view, video recording, and passive driver-assistance systems. Compared with CV5, CV7 reduces power consumption by about 20 per cent and delivers more than 2.5 times higher AI throughput through a third-generation CVflow AI accelerator that supports concurrent CNN and transformer-based networks. The SoC integrates an AI accelerator, an image signal processor, video encoding, ARM



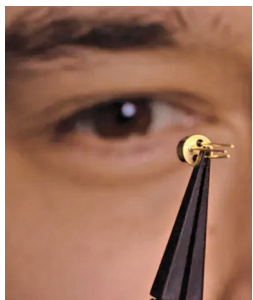
CPU cores, and I/O on a single chip, reducing system size and the bill of materials.

Ambarella

<https://www.ambarella.com>

Avalanche photodiode infrared sensors

Many IR systems struggle with limited sensitivity, which can reduce range, accuracy, and the ability to detect



small or low-reflectivity targets. Phlux Technology's Aura Noiseless InGaAs APDs address this by providing about 12 times the sensitivity

of standard InGaAs APDs, enabling systems to reach longer distances or use lower laser power, which also reduces cost, size, and weight and eases thermal design. They are suited for engineers and designers working on laser range finders, OTDRs, long-range lidar, free-space optical links, and hollow-core fibre systems, particularly where eye-safe operation, high dynamic range, fast recovery from reflections, and reliable performance up to +85°C are needed.

Phlux Technology

<https://phluxtechnology.com>

Inertial measurement unit

Smart wearables and hearables require motion-tracking sensors that use minimal power, and Bosch



Sensortec's BMI423 IMU (inertial measurement unit) meets this need by combining a wide measurement range with low power consumption.

It captures motion data from devices such as wearables, earbuds, fitness trackers, and robots while allowing the main processor to sleep to save battery. The BMI423's accelerometer measures $\pm 32g$, and its gyroscope ± 4000 degrees per second, doubling the range of the previous generation, enabling it to track fast movements that standard sensors often miss, making it suitable for sports tracking, gaming, or robotic control. On-sensor features such as bone-conduction voice detection activate microphones only when the user speaks, saving power and protecting privacy, while gesture recognition, multi-tap detection, and step counting are handled on the sensor, reducing processor load and extending battery life in devices.

Bosch Sensortec

<https://www.bosch-sensortec.com>

Single-chip LCOS panel

OMNIVISION has launched the OP03021, the industry's only single-chip liquid crystal on silicon (LCOS) panel with ultra-low power for next-generation smart glasses. The 0.26-inch (6.6mm) LCOS microdisplay



delivers 1632 x 1536 resolution at 90Hz, enabling higher resolution and a wider field of view to support a more immersive and comfortable augmented reality (AR) experience. The panel integrates a CMOS LCOS cell, an ASIC driver, frame buffer memory, and a MIPI receiver on the silicon backplane, reducing both size and power consumption, which are key factors for wearable designs.

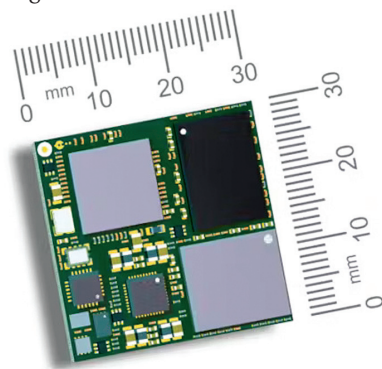
Omnivision

<https://www.ovt.com>

COM families

Many industrial automation and IoT devices struggle with limited space, difficult servicing, and the need for reliable, long-term edge computing,

especially when AI or real-time processing is required. Toradex's OSM and Lino computer-on-module (COM) families address these challenges. OSM's 30mm x 30mm soldera-



ble BGA design fits into tight spaces for permanent, rugged installations, while Lino's connector-based modules make upgrades and servicing easy. Both offer flexible hardware. Together, these COMs enable developers to build compact, intelligent, and maintainable devices efficiently.

Toradex

<https://www.toradex.com>

Solid-state active cooling chip

Devices running AI Reasoning Models, handheld gaming, storage, or 5G/Wi-Fi radios often overheat, limiting



performance and causing slowdowns, errors, or shorter lifespans. The AirJet Mini G2 from Frore Systems solves this by removing 50% more heat within the same footprint, allowing notebooks, tablets, mini-PCs, smartphones, cameras, SSDs, and industrial or IoT devices to run without thermal throttling. Its design keeps devices running under sustained workloads, improving performance and stability across consumer, industrial, datacentre, defence, and automotive applications.

Frore Systems

<https://www.froresystems.com>



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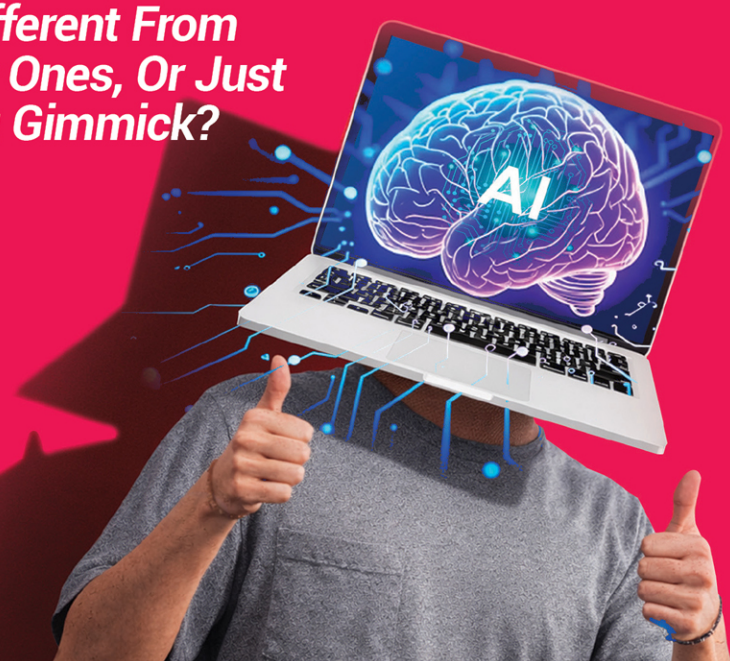
The New

electronics

FOR YOU

What On Earth Are AI PCs And Laptops?

*Are They Different From
The Regular Ones, Or Just
A Marketing Gimmick?*



MUST READ

"If You Have
Ideas, Passion,
Energy...Go
Ahead And Do It."

— Prof. Ajay Kumar
Sood, Principal Scientific
Adviser (PSA) to the
Government of India



Winners of
EFY's Auto
R&D Awards



Leading
Suppliers Of
SMT Reflow
Oven



Why
Automotive
Displays Could
Redefine
India's Mobility
Future



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