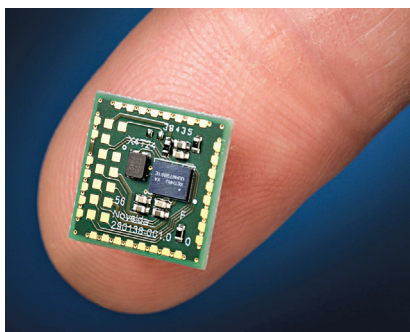# TRULY INNOVATIVE TECH

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

Human-presence sensor

The latest NOVELDA ultra-sideband (UWB) sensors for smart home and building automation give any device the ability to accurately sense human

presence. Groundbreaking UWB impulse radar can detect human presence and motion, providing more accurate touch-free interaction with everyday products, including laptops, smart refrigerators, and lighting. The sensor works by detecting tiny movements made when we breathe to perceive human presence. The sensor is so robust it can sense human presence even if subjects are lying under a duvet or wearing several layers of clothing. Causing no impact on product design, it can be completely hidden in a device and can operate through glass, plastic, or wood.
NOVELDA
www.novelda.com

Smallest UWB module

The world's smallest ultra-wideband (UWB) module combines elevated levels of accuracy and reliability with low power to ensure compact and battery-driven IoT devices operate as efficiently and cost-effectively as possible. Using short-range radio frequency (RF) technology, the Type 2AB UWB + Bluetooth low-energy (BLE) connectivity module can be

used in a wide variety of applications where precise detection is essential, including social distancing to minimise the spread of Covid-19. Ideal for
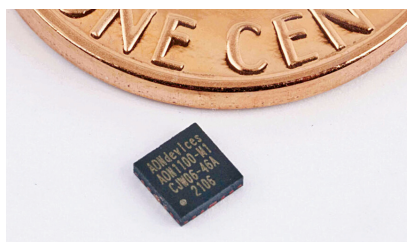

manufacturing engineers developing advanced products for the IoT market, the system-in-package module incorporates three antennas—two UWB for phased difference of arrival functionality and one for BLE.
Murata Manufacturing
www.murata.com

Motion-sensing AI edge chip

The new AON1100 edge AI processor enables unprecedented sensing capabilities in battery-powered always-on devices that need to support local

wake words, voice commands, sound event detection, context detection, and sensor fusion at high accuracy—all while maintaining industry-leading low power consumption that extends battery life, which results in a better end-user experience. It also simultaneously detects specific motion patterns, such as walking or falling. When used in phones, headsets, wearables, game controllers, vehicles, or smart home

appliances, the AON1100 enables natural human-machine interface at the device level without sending any data to the cloud, improving the user experience and guaranteeing privacy.
AONDevices
www.aondevices.com

Long-range sub-GHz SoCs

The new sub-1GHz (sub-GHz) SoCs deliver the world's first sub-GHz wireless solutions that combine long-range RF and energy efficiency with certified ARM PSA Level 3 security to meet the

global demand for high-performance, battery-powered IoT products. The EFR32FG23 (FG23) and EFR32ZG23 (ZG23) system-on-chip (SoC) solutions provide developers with flexible, multi-protocol sub-GHz connectivity options, supporting a wide range of modulation schemes and advanced wireless technologies, including Amazon Sidewalk, mioty, Wireless M-Bus, Z-Wave, and proprietary IoT networks.
Silicon Labs
www.silabs.com

Solid-state ToF lidar

2D/3D dual solid-state ToF lidar helps translate the 3D world and a 3D object into a 2D image using precisely measured depth data, so it can be used for security, industrial automation, drones, touch-screen, and more. The budget-friendly device weighs only 28gm and

features a compact design. Key features include map-building and obstacle avoidance, fast sampling rate, small
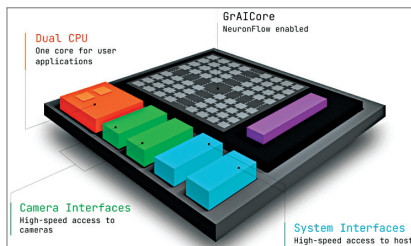

module without motor, and competitive price advantage.
Cygbot
www.cygbot.com

Fast-response AI SoC

The GrAI VIP (vision inference processor), a full-stack AI system-on-chip platform, drives a significant step in fast responsiveness for visual infer-

ence capabilities in robotics, industrial automation, AR/VR, and surveillance products and markets. NeuronFlow event-based dataflow compute technology in GrAI VIP enables industry-leading inference latency up to 100x better than competing solutions. AI application developers looking for lightning-fast responses for their edge algorithms can greatly benefit from the GrAI VIP platform and drive game-changing products in industrial automation, robotics, and more.
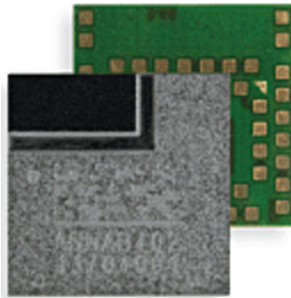*GrAI Matter Labs*
www.grmatterlabs.ai

Compact Bluetooth 5.1 SiP

The ANNA-B4 module, a feature-rich ultra-compact Bluetooth 5.1 system-in-package (SiP), targets applications in harsh environments, such as smart lighting networks and industrial circuit breakers as well as indoor positioning use cases in manufacturing sites, warehouses, hospitals, and smart cities.
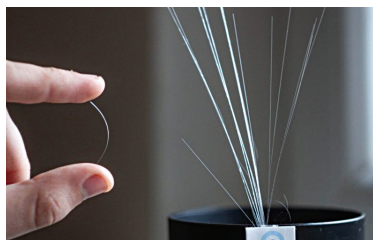

It combines the Nordic nRF52833 chipset's feature set with u-blox's expertise in chipset and module design into a compact and powerful component. The SiP supports Bluetooth mesh, long range and direction finding, Thread and Zigbee, and operation up to 105°C. The ANNA-B4 is available in two product variants: ANNA-B412 and ANNA-B402.
u-blox
www.u-blox.com

Thin elastic multi-purpose sensor

The miniaturised glass-coated sensor is thin and elastic like a hair and sends accurate real-time data regarding a wide range of physical quantities directly to your phone. It can measure
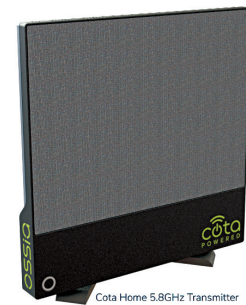

temperature, pressure, stress, torsion, or position of your material with a tool thinner than a grain of sand. It is affordable and also quick and easy to manufacture as per specific requirements. Passive measuring is based on micro-wire technology and magnetic fields with no need for power sources. The elastic, anti-corrosive, and undestroyable sensor can be placed in any material without affecting its properties or environment.
RVmagnetics
www.rvmagnetics.com

Wireless power receiver/transmitter

Cota is a device that works very similarly to Wi-Fi, except instead of sending

Cota Home 5.8GHz Transmitter

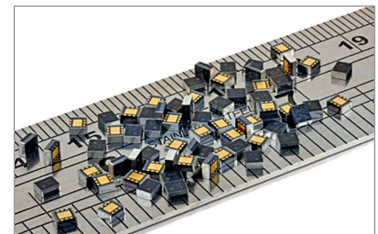data, it sends power to wirelessly charge your electronic equipment. The Cota power receiver, embedded into any device, initiates the 'conversation' by sending a beacon signal to find a Cota power transmitter. The transmitter then sends power back in the same exact path. This 'conversation' between device and transmitter happens 100x/second to send power safely to devices at a distance even while in motion. All your Cota-enabled devices will receive power simultaneously.
Ossia
www.ossia.com

Ultra-small DC-DC converters

An XCL series ultra-small DC-DC converter integrates a coil and a control IC. The product simultaneously achieves space-saving, high efficiency, low noise, high heat dissipation, and low cost. The electrical circuitry of the micro DC-DC

XCL series is optimised, making it possible to achieve a lower noise than with a discrete DC-DC converter configuration. The micro DC-DC XCL series is available as an ultra-small 'pocket type' with low EMI noise that supports currents up to 1A, a 'stack type' that simplifies the manufacturing line to achieve low cost, and a 'multiple type' that incorporates a large coil and supports large currents.
Torex Semiconductor
www.torexsemi.com