



Raytron OEM Launches Falcon500, Its Third-Generation Infrared AI Image Processor

Descrizione

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YANTAI, China, Sept. 21, 2026 /PRNewswire/ â?? Raytron OEM, a provider of infrared sensing technologies, introduces Falcon500, its third-generation dedicated infrared AI image processing chip. Designed for next-generation thermal imaging products, Falcon500 combines advanced image processing, intelligent sensing, and precision temperature measurement in a highly integrated architecture.

What Is a Dedicated Infrared AI Image Processing Chip?

Thermal imaging relies on specialized image processing to turn raw infrared signals into clear, stable, and usable images. Unlike conventional image sensors, infrared sensors require dedicated processing to address signal variations, noise, and other imaging challenges. Integrating AI and image processing on a dedicated chip enables greater system integration while improving imaging performance and power efficiency.

Five Core Capabilities of Falcon500

Falcon500 integrates five core capabilities: high-performance computing, professional infrared AI-ISP (AI-powered Image Signal Processing), intelligent sensing, multimodal integration, and precision temperature measurement.

Its new-generation infrared AI-ISP architecture optimizes image detail, noise reduction, texture preservation, and imaging stability under dynamic conditions. A heterogeneous NPU enables efficient on-device AI inference, with models developed using tens of millions of real-world samples to support intelligent functions such as object recognition and alerts.

For multimodal applications, Falcon500 uses pixel-level image alignment to combine visible-light details with infrared temperature information and supports up to five video streams. It also integrates distortion correction, hardware encryption, fault protection, and multiple high-speed interfaces. An optimized hardware-based temperature measurement pipeline incorporates optical correction, environmental compensation, and temperature-processing algorithms to improve measurement stability and reduce processing latency.

Enabling Product Upgrades Across Multiple Applications

Falcon500 is designed to support a broad range of thermal imaging products, including portable thermal imaging devices, industrial inspection equipment, driver-assistance systems, and civilian low-altitude platforms. Its combination of high-resolution imaging, on-device AI, and precision temperature measurement enables manufacturers to develop more integrated and capable products across different application scenarios.

Compared with the previous generation, Falcon500 delivers a 15% increase in Mean Opinion Score (MOS) in typical scenes and a 30% increase in challenging scenes, according to Raytron OEM testing. Its integrated processing architecture can help OEMs streamline product development while improving imaging performance and system efficiency.

With Falcon500, Raytron OEM continues to expand its dedicated infrared processing capabilities, providing an integrated foundation for the development of next-generation thermal imaging products.

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