Technical Overview of the leagend TC101 Android Thermal Imager

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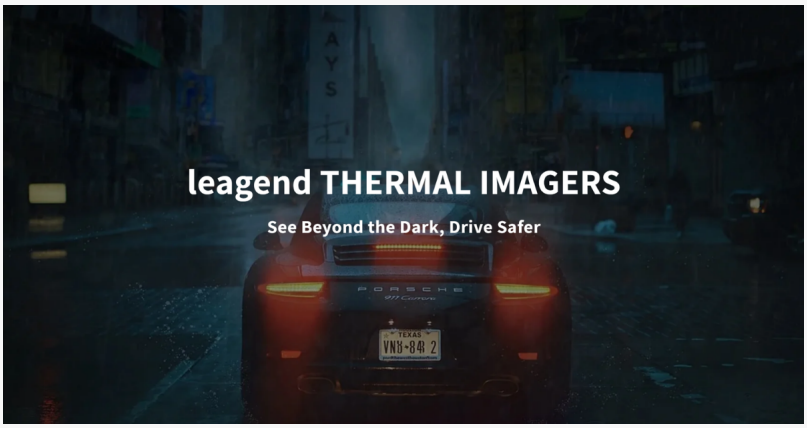
TC101



leagend Thermal Imagers

NEW YORK, NY, UNITED STATES, July 5, 2025 /EINPresswire.com/ -- Thermal imaging technology plays a critical role in operational diagnostics, providing a non-contact, real-time method for identifying heat anomalies in various environments. A thermal imager, also known as a thermal imaging camera or infrared camera, functions by detecting infrared radiation emitted from objects and converting it into visible thermal images. This process allows technicians to visualize temperature differences rather than relying on visible light, making thermal imagers effective even in conditions of total darkness, smoke, fog, rain, or dust.

By connecting directly to Android devices via USB-C, leagend TC101 enables real-time thermal imaging and precise temperature measurement, supporting various environments.

leagend Thermal Imager Functional Overview

leagend TC101 is built around an uncooled vanadium oxide infrared sensor with a native resolution of 256×192 pixels. It delivers a thermal frame rate of 25Hz, providing smooth, continuous imaging for dynamic or real-time

temperature monitoring. The system measures temperatures within a range of –20°C to 550°C, with a thermal sensitivity of 0.1°C, allowing detection of subtle thermal variations that may indicate equipment stress or emerging faults.

leagend

leagend TC101 operates within a spectral range of 8–14µm, which is suitable for most industrial and operational diagnostics. Its 56°×42° field of view ensures effective coverage of both confined and open areas, while an instantaneous field of view (IFOV) of 3.75 milliradians provides detailed, localized thermal inspection at close distances. The device's 12µm pixel size contributes to its imaging precision, particularly when assessing small heat sources or localized temperature differences on equipment surfaces.

leagend TC101 supports the primary application of automotive night vision assist (Vehicle Night Vision Systems / Thermal Imaging for Driving).

Driving at night or in low-visibility conditions presents significant safety challenges, particularly in environments with limited street lighting, adverse weather, or rural roads. Traditional headlights offer a limited field of illumination, often reducing the driver's ability to detect obstacles, pedestrians, animals, or other vehicles until they are dangerously close. leagend TC101 addresses this limitation by detecting the heat signatures emitted by objects, independent of ambient light conditions.

In automotive applications, leagend TC101 is typically integrated into vehicle night vision systems or mounted externally for supplemental situational awareness. These systems generate real-time thermal images that display pedestrians, animals, and other warm objects as distinct, high-contrast figures against cooler backgrounds. This capability allows drivers to identify potential hazards beyond the reach of headlights, even in complete darkness, fog, rain, or smoke.

Thermal imaging enhances reaction times and situational awareness, particularly on high-speed roads or in off-road environments. It also assists in detecting animals on rural routes and identifying stationary or disabled vehicles on poorly lit highways. By providing continuous, real-time temperature-based imaging, systems like leagend TC101 contribute to improved night driving safety and operational efficiency in fleet, logistics, and emergency service vehicles.

Diagnostic Features and Operational Tools
In addition to its imaging hardware, leagend TC101 is supported by a dedicated Android application, enabling technicians to perform real-time image capture, video recording, and

temperature measurement overlays. Users can mark points, lines, and areas of interest on the thermal image, with corresponding temperature data displayed on-screen. The application also supports adjustable high and low-temperature alarms, providing immediate alerts when critical thresholds are exceeded.

Additional diagnostic tools include real-time waveform and trend graphing of selected measurement points, thermal-visible fusion modes for contextual imaging, and picture-in-picture displays combining infrared and visible images. The leagend TC101's integrated PDF report generation feature automatically compiles captured images, temperature data, and notes into standardized inspection reports, streamlining maintenance documentation processes.

About leagend

Founded in 2005, leagend has focused on the research and development of advanced technologies for battery testing, monitoring, and diagnostics across automotive, marine, and industrial applications. Over the past 20 years, the company has become a recognized top manufacturer in the field, known for pioneering high-precision battery management algorithms and consistently setting industry standards for performance and reliability.

Today, leagend offers a comprehensive product portfolio that includes battery testers, monitoring systems, chargers, and OBD II diagnostic tools. Trusted by professionals worldwide, these solutions are valued for their accuracy, durability, and intuitive design. leagend's ongoing commitment to innovation ensures its products continue to meet the evolving needs of modern vehicles and complex power systems.

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