

# Technical Brief

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## Thermal Imaging Scanner with Edge Computing

### Technology Summary

BMek has developed a thermal scanner using Embedded AI for detecting near real time elevated body temperature. It is an automated temperature screening solution.

### Background

According to the Centers of Disease and Control (CDC), fever is one of the more commonly reported symptoms among people who are hospitalized with COVID-19. Fortunately, elevated body temperature is detectable with the help of thermal scanning technology, and so such scanners can serve as a frontline screening tool at the workplace, and can help identify suspects and help to prevent the spread of the coronavirus. Both the CDC and the WHO recommends daily temperature screening at the workplace.

### Technology Description

The thermal screening system consists of an uncooled infrared thermal camera and a visible light camera. The infrared thermal camera heat sensors collect infrared radiation from the objects, generating high-resolution thermal images. These thermal images and visible light camera images are processed with advanced neural network techniques using Quad Core ARM processor, 100+ GPUs to report the estimated body temperature. As soon as a person appears in front of the system, he is detected and his estimated body temperature is displayed. A green frame indicates an estimated body temperature equal to or below 37°C, while elevated body temperatures greater than 37.5°C are indicated by a red frame.

### Market Potential

The global thermal scanners market size is estimated to grow from USD 4.1 billion in 2020 to USD 6.2 billion by 2025, at a CAGR of 8.6%

(<https://www.researchandmarkets.com/reports/4997735/thermal-scanners-market-by-wavelength-lwir>)

### Application

Mass screening at crowded places with / without internet connectivity.

### Value Proposition

- Computing at the edge eliminates the need for cloud connectivity, thus making the technology attractive for sectors with high security requirements such as defence or in areas with poor internet connectivity.
- The facility can be remotely monitored and data can be stored for future use.
- The thermal scanner with face mask detection can be connected to an automated door that will not open for people with elevated body temperatures or those not wearing a mask.
- Unlike a gun thermometer where people can only be screened one by one, the current technology can scan temperature for all the people within the frame. It is more accurate for people at a distance of up to 2+ meters, thereby minimizing close human contact.

### Technology Status

Proprietary hardware and software knowhow owned by BMek. Live pilot at 2 locations. BMek is seeking technology licensors.

