

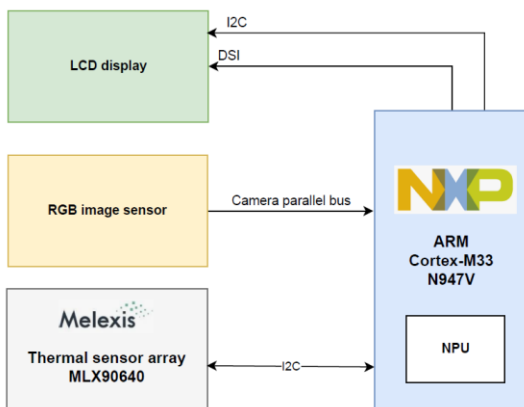
AI Thermal Imaging System

Description:

This solution is an advanced thermal imaging solution that combines **Melexis MLX90640** 32x24 far-infrared thermal sensor array with the **NXP MCX-N9 series** high-performance deep learning MCU. This powerful integration enables precise measurement of human or object surface temperatures with exceptional accuracy.

Features:

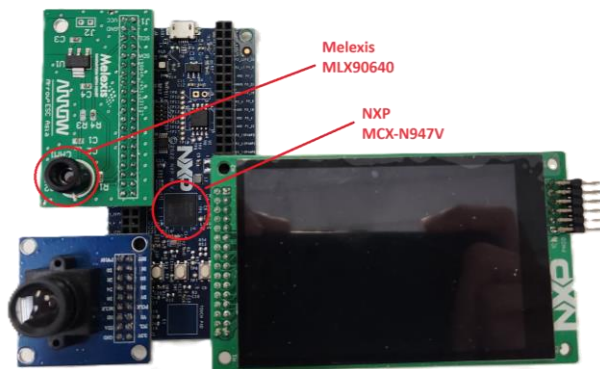
By utilizing advanced AI algorithms and the Neural Processing Unit included in NXP latest MCU, the system can intelligently outline human face location. This intelligent filtering can eliminate interference from irrelevant elements, leading to increased accuracy in temperature readings.



Thermal data is displayed on LCD in heatmap format to allow user to visualize heat distribution of object surface.



Core Chips and advantages:



1. NXP MCX-N947V

This advanced series debuts NXP's proprietary Neural Processing Unit (NPU). The integrated NPU provides up to 30x the machine learning (ML) throughput compared to a CPU, with a high level of integration and accurate simulation capabilities.

2. Melexis MLX90640

MLX90640 is a 768-pixel (32 x 24) low-cost thermal sensor array. It uses a series of infrared detectors (and filters) to detect radiation emitted by nearby objects and measure surface temperature of an object with refresh rate up to 64Hz and accuracy up to $\pm 1^{\circ}\text{C}$.

Applications:

- Video Doorbell system
- Baby monitoring system
- Fever detection camera
- AI infrared thermal imaging gun

