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Smart Fan Demo

Description

The demonstration is setup by a far infrared thermal sensor to detect and indicate a heat source with LED board. When the heat source locates in the middle of the detection zone, the motor starts. And the temperature higher, the speed of motor will be higher. It throght MCU MXCA153 to receive data of temperature and let PWM to control motor that speed up the fan when temperature over the threshold.

Advantages

The convergence of edge AI, motor control, and multi-point thermal detection can be intelligently used in many applications.

Features

- MCX A series MCUs, powered by the Arm® Cortex®-M33, are general-purpose MCUs designed to address a wide range of applications with scalable device options, low power and intelligent peripherals.
- Temperature zone detection by MLX90641 thermal sensor with 16x12 pixels IR array with LEDs indication on hot spot.
- BLDC motor control by MCX A series MCU.

Core Chips

- MCU control: **NXP** MXCA153
- Driver board: **NXP** FRDM-MC-LVPMSM
- Thermal sensor: **Melexis** MLX90641

Applications

- Smart appliance (motor control and thermal management)
- Industrial Robot / Cobot (motor control)
- Alarm system (Temperature Zone detection)

Block Diagram