



## Edge AI Ready Pico-ITX i.MX8M Plus Board for Industrial Panel PC and IoT Solutions

Estone Technology is proud to announce a new addition to our Pico-ITX embedded board family: EMB-2239, an NXP i.MX8M Plus based single board computer. Building on the success of our i.MX8M board series, the EMB-2239 is our latest embedded board that focuses on Edge AI, vision, advanced multimedia, and touch panel HMI applications. This ARM embedded board takes advantage of NXP's i.MX8M Plus application processor with dedicated Neural Processing Unit (NPU), dual image signal processors (ISP) and up to 15-year longevity support. It is built for ODM projects and industrial computer designs specifically for the fast-growing Edge AI computing, machine vision, human machine interface (HMI), advanced voice/audio, and machine learning applications.

Positioning for embedded and industrial IoT applications with machine learning (ML) inference and vision requirements, the EMB-2239's i.MX8M Plus processor has an integrated NPU AI Accelerator, offloading artificial intelligence mathematical operation intensive workloads and accelerating a wide range of machine learning applications, including image classification, object detection, object tracking, natural language processing, and key phrase detection. The board also features two MIPI CSI interfaces and dual Image Signal Processors (ISPs), which support two cameras with resolutions up to 12MP. The board also supports NXP eIQ machine learning (ML) software development environment, enabling developers to incorporate complete system-level applications based on inference engines like TensorFlow Lite, DeepViewRT and ONNX Runtime.

Unique features of the EMB-2239 include a Power-over-Ethernet (PoE) ready GbE port, dual core hardware DSP smart codec for voice-control algorithms, integrated FPC connectors with dual channel LVDS, 4-lane MIPI DSI and built in I2C touch panel support for easy Panel PC and HMI touchscreen integrations. A 40-pin expansion header supports PCIe, GPIO, I2C, USB, serial communications and up to two additional Gigabit Ethernet ports. BSP supports include Yocto Embedded Linux, Android, Qt, Wayland, Amazon AVS (Alexa Voice Service) Device SDK, Sensory TrulyHandsfree Wake Word Engine, NXP eIQ Toolkit, along with inference engines, neural network compilers and optimized libraries.

### Highlighted Product Specifications:

Processor – NXP i.MX8M Plus with four 1.8 GHz Cortex-A53 and one 800MHz Cortex-M7

Edge AI - Integrated AI/ML Neural Processing Unit accelerating ML inferencing, eIQ Toolkit

POE – Gigabit Ethernet with POE ready with optional POE add-on board

Vision – Dual MIPI CSI interfaces for two MIPI CSI camera inputs with two Image Signal Processor (ISP) channels for intelligent vision

Touch Panel – MIPI DSI, LVDS, I2C integrated connectors for LCD and touch panel controller

Expansion – 40-Pin Connector with PCIe, GPIO, Front Panel Control, PoE Input, 8-Channel audio and up to two Gigabit Ethernet

I/O – 1x RS-232/485/GPIO terminal block, 3x USB 2.0 Type A, 1x USB Type C 3.0 OTG

Voice Control – Dual Digital MEMS Microphone Header via hardware DSP smart codec

<https://www.estonetech.com/products/x-86-arm-boards/emb-2239-nxp-i-mx8m-plus-poe-edge-ai-embedded-board/> Edge AI demo: <https://wiki.estonetech.com/index.php?title=EMB-2239>

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