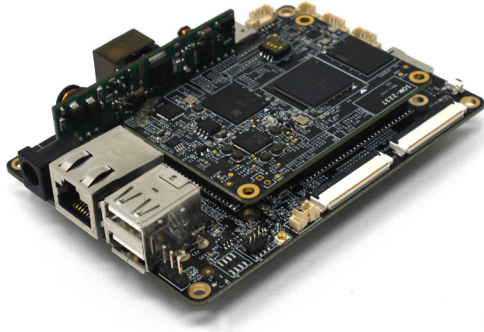


Pico-ITX POE Edge AI Embedded Board with NXP i.MX8M Mini ARM Processor, Dual-core DSP for Voice Control, POE, MIPI, LVDS and Edge TPU Support



INTRODUCTION

The EMB-2237-AI is a Pico-ITX (100x 72mm) POE edge AI embedded board based on NXP i.MX8M Mini ARM application processor. The board features a Power over Ethernet (PoE) Ethernet port, on-board dual-core DSP that runs algorithms for voice control, noise suppression, and echo cancellation technology, a full set of I/Os including RS-232/485, and m.2 PCIe slot for Edge TPU AI-based solutions.

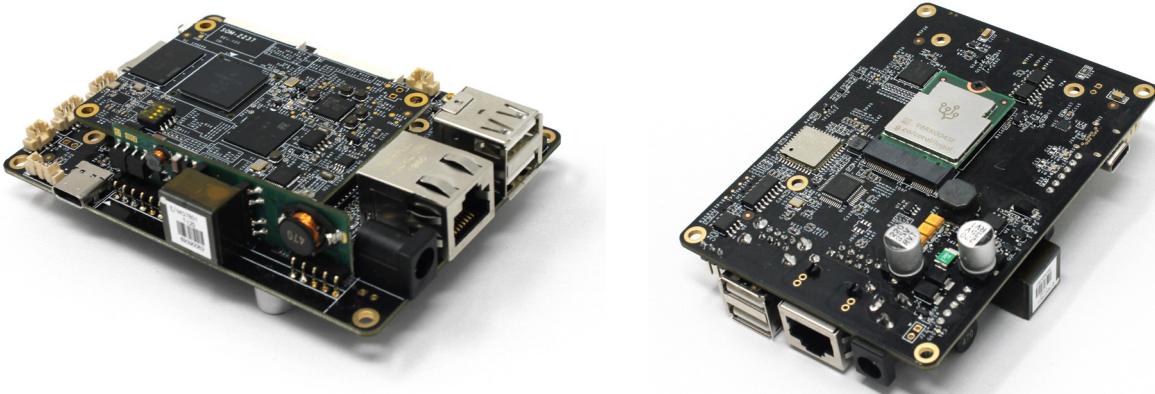
FEATURES

- NXP i.MX8M Mini with up to four 1.8 GHz Cortex-A53 processors
- One Cortex-M4 for real time requirements
- Fast Ethernet with build-in POE (Power over Ethernet) feature
- Smart codec with dual-core DSP for digital MICs and voice control
- MIPI DSI, LVDS, RGB, I2C connectors for LCD and touch panel support
- m.2 PCIe slot supports Google's Edge TPU for high-performance ML
- Rich I/O with RS-232/485, I2C, GPIOs, USB 2.0 ports

SPECIFICATIONS

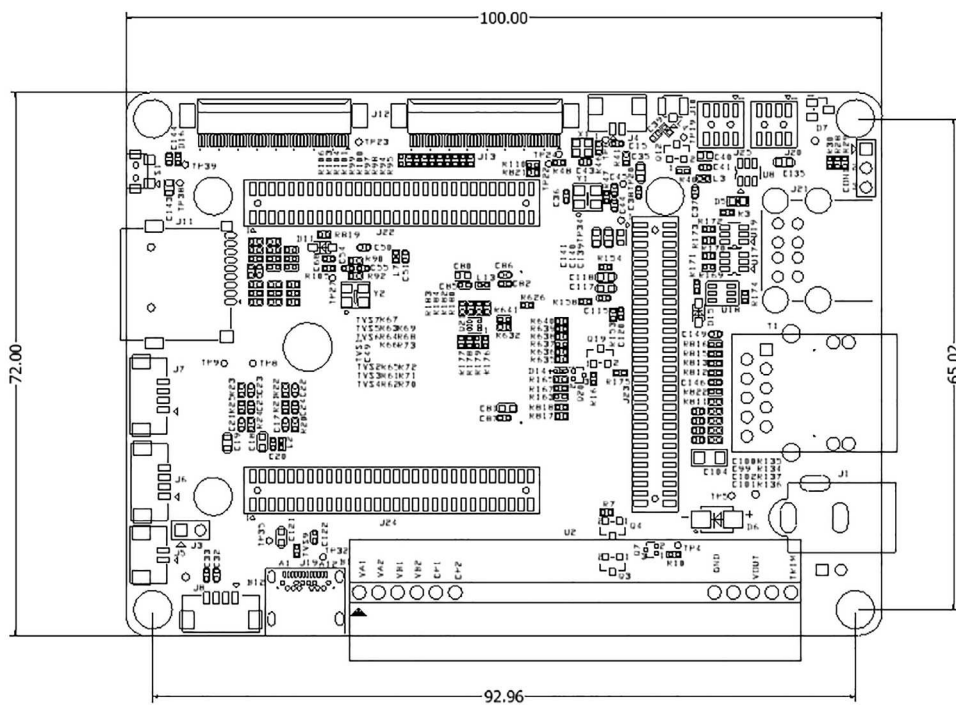
Model	EMB-2237-AI (SOM-2237 + IOB-2407)
Platform	ARM Cortex-A53
Processor	NXP i.MX 8M Mini, 4x ARM Cortex-A53 @ 1.8GHz, 1x Arm Cortex-M4 @ 400MHz
System Memory	Onboard 2GB LPDDR4, up to 4GB
Ethernet	1 x 10/100 Mbps Ethernet with POE support
Storage	Onboard iNAND flash (8GB default), 1x micro SD slot, 265K EEPROM with write protect control
Wireless	1x WiFi/Bluetooth (AP6212A) module, 802.11 b/g/n + Bluetooth v4.0
AI/ML	OpenCL CPU: 32 GOPS; Google Edge TPU coprocessor PCIe option, up to 4 TOPS
LCD Interface	1x MIPI 4-lane DSI, 1x Dual Channel LVDS and 24bit RGB for 5", 7", 8", 10.1" and other size LCD panels
Display Resolution	Up to 1920x 1200
Graphic Controller	GC NanoUltra (1 shader), OpenGL ES 2.0; GC520L 2D
Audio	1 x mono Class D speaker out, 2W(4Ω), 2 (R/L) x line-out and amplified (2x 1.5W) out headers
Voice Control	Dual digital MEMS microphone header via CS47L24 with dual DSP, support multi-mic noise suppression, acoustic echo cancellation (AEC), omni-directional spatial
I/O	1x RS-232/RS-485 pin header 2x USB2.0 Type A, 2x USB2.0 header, 1x USB Type C OTG 4+ GPIO, 2x I2C (for TP and MIPI CSI) 1x MIPI 4-lane CSI
Expansion	1x POE (Power over Ethernet) IEEE 802.3af Module, 1x M.2-2230 (E key) slot
Watchdog timer	Programmable timer system reset
OS Support	Embedded Linux (kernel version 4.14, Qt and Wayland), Amazon AVS (Alexa Voice Service) Device SDK, Sensory TrulyHandsfree Wake Word Engine, Android 9
Power Input	12V DC barrel jack or POE via RJ45
Form Factor	Embedded Pico-ITX standard
Operating Temperature	0 ~ 60°C (32 ~ 140°F)
Storage Temperature	-40 ~ 85° C (-40 ~ 185° F)
Operating Humidity	5% ~ 95% @ 40°C (Non-Condensing)
Dimensions	100 x 72 mm (3.94" x 2.83")

LAYOUT



DIMENSIONS

Unit: mm



ORDER INFORMATION

Part No.	Description
SOM-2237	NXP i.MX8M Mini SOM with Smart Coded and Ethernet
IOB-2407	IOB-2407 Carrier Board for SOM-2237
EMB-2237-AI	SOM-2237 i.MX8M Mini SOM + IOB-2407 Carrier Board
EMB-2237-AI-POE	SOM-2237 i.MX8M Mini SOM + IOB-2407 Carrier Board with POE Module