

FEATURES

- NXP i.MX8M Mini 1.8GHz Cortex-A53 Processors
- One Cortex-M4 For Real-Time Requirements
- Fast Ethernet With Build-in PoE Feature
- Smart Codec With Dual-Core DSP For Voice Control
- MIPI DSI, LVDS, RGB, I²C Connectors For LCD Touch Panel
- M.2 PCIe Slot Supports Google's Edge TPU AI Module
- Rich I/O With RS232/RS485, I²C, GPIOs, USB 2.0 Ports

The EMB-2237-AI is a Pico-ITX (100 x 72mm) PoE (Power over Ethernet) Edge AI embedded board based on NXP i.MX8M Mini ARM application processor. The board features a PoE Ethernet port, on-board dual-core DSP that runs algorithms for voice control, noise suppression, and echo cancellation technology. It also offers a full set of I/Os including RS232/RS485, and M.2 PCIe slot for Edge TPU AI based solutions.

SPECIFICATIONS

SYSTEM

Processor	NXP i.MX8M Mini, 4 x ARM Cortex-A53 @ 1.8GHz, 1 x ARM Cortex-M4 @ 400MHz
Platform	ARM Cortex-A53
Graphic Controller	GC NanoUltra (1 Shader), OpenGL ES 2.0, GC520L 2D
Memory	On-board 2GB LPDDR4, Up to 4GB
Storage	On-board iNAND Flash (8GB Default), 1 x Micro SD Slot
OS	Embedded Linux (Kernel Version 4.14, Qt and Wayland), Amazon AVS (Alexa Voice Service) Device SDK, Sensory TrulyHandsfree Wake Word Engine, Android 9

DISPLAY

LCD Interface	1 x MIPI 4-lane DSI, 1 x Dual Channel LVDS and 24bit RGB for 5", 7", 8", 10.1" and other Size LCD Panels
Display Resolution	Up to 1920 x 1200

COMMUNICATIONS

Ethernet	1 x 10/100 Mbps Gigabit Ethernet with PoE Support
Wireless	1 x WiFi / Bluetooth (AP6212A) Module, 802.11 b/g/n + Bluetooth 4.0

POWER

Power Input	12V DC Barrel Jack or PoE Via RJ45
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I/O INTERFACE

AI/ML	OpenCL CPU: 32 GOPS Google Edge TPU Coprocessor PCIe Option, Up To 4 TOPS
Audio	1 x Mono Class D Speaker Out, 2W (4Ω), 2 (R/L) x Line-out 2 x Amplified 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
Watchdog Timer	Programmable Timer System Reset
I/O Ports	1 x RS232/RS485 Pin Header 2 x USB 2.0 Type A 2 x USB 2.0 Header 1 x USB Type C OTG 4+ GPIO, 2 x I ² C (for TP and MIPI CSI) 1 x MIPI 4-lane CSI
Expansion	1 x PoE (Power over Ethernet) IEEE 802.3af Module 1 x M.2-2230 (E Key) Slot

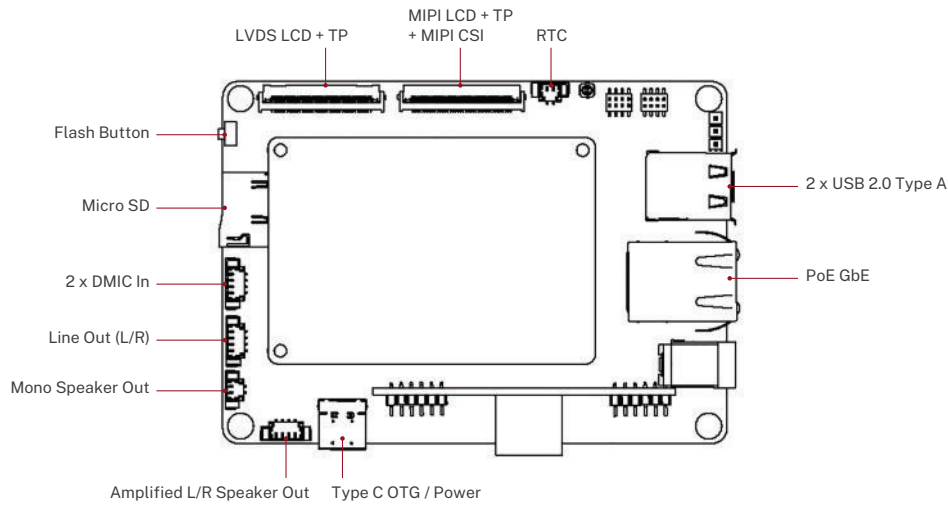
MECHANICAL

Form Factor	Embedded Pico-ITX Standard
Dimensions	100 x 72mm (3.94" x 2.83")
Cooling	Fanless

ENVIRONMENTAL

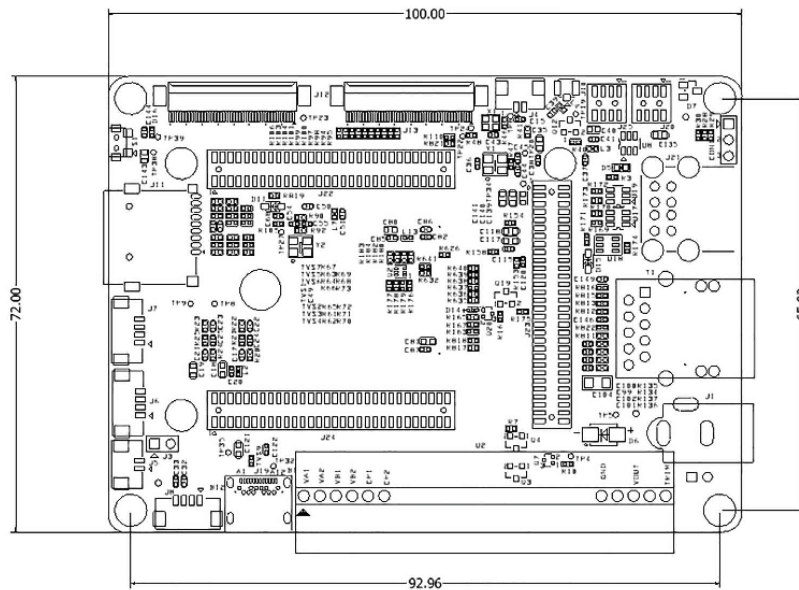
Temperature:	
- Operation	0°C to 60°C (32°F to 140°F)
- Storage	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% @ 40°C Non-condensing

SYSTEM LAYOUT



PRODUCT DIMENSIONS

Unit: mm



ORDER INFORMATION

Part No.	Description
SOM-2237	NXP i.MX8M Mini SOM with Smart Codec & 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