CPS 50-N01

NXP i.MX8M Plus Cortex®-A53 Quad Core Fanless System

Main Features

- NXP i.MX8M Plus Cortex®-A53 quad core processor
- Embedded Neural Processing Unit (NPU) delivers up to 2.3 TOPS AI performance
- 1 x HDMI
- 1 x USB 3.0, 1 x USB 2.0
- 1 x COM
- 2 x GbE LAN ports
- 1 x Full-size mini-PCIe for optional Wi-Fi/BT/4G LTE (PCIe 3.0, USB 2.0, SIM)
- 1 x Internal M.2 2230 Key E (USB 2.0, SDIO, UART)
- Modular rear I/O design for easy customization
- Support 9~30V DC input

Product Overview

CPS 50 is a fanless PC powered by NXP i.MX8M Plus Cortex®-A53 quad core processor with Neural Network Accelerator up to 2.3 TOPS designed for advanced machine learning inference at the industrial and IoT (Internet-of-Things) edge that require high-performance and low power consumption. CPS 50 comes with onboard 2GB LPDDR4 memory, 32GB eMMC, and internal Micro SD slot for storage expansion. CPS 50 packs all-you-need peripheral connectivity and offers flexibility with a modular rear I/O design for easy customization. The CPS 50 offers strong connectivity - Ethernet-based LAN ports and traditional serial ports, mainly for Modbus TCP or Modbus RTU communication. For wireless connectivity, CPS 50 has mini-PCIe and M.2 sockets that can support optional wireless modules for IoT applications, for example, Wi-Fi, Bluetooth, 4G LTE, and 5G modules as well as a storage module. CPS 50 supports a wide DC input range from 9-30VDC. All of the features make CPS 50 suitable for various applications such as edge AI, M2M intelligent systems, and factory automation platforms.

Specifications

CPU Support
- NXP i.MX8M Plus Cortex®-A53 quad core 1.6 GHz

Main Memory
- Onboard LPDDR4 2 GB, 4000MT/s memory

Display Option
- 1 x HDMI, resolution 3840 x 2160 @30 Hz, 1920 x 1080 @60 Hz

LED System Indicators
- Top: 3 x Green wireless network status LED
- Front: 1 x Green power LED, 1 x Green S/W programmable LED

I/O Interface-Front
- ATX power on/off switch
- 1 x HDMI
- 2 x RJ45 for GbE LAN
- 1 x USB 3.0 Type A port (900 mA), 1 x USB 2.0 Type A port (500 mA)
- 1 x DB9 for RS-232/422/485, select by SW (TX, RX, CTS, RTS 4 wire only)
- 1 x 3-pin terminal block, support 9-30VDC input
- 2 x Antenna hole for optional Wi-Fi/4G/LTE antenna

I/O Interface-Rear
- 4 x Antenna hole for optional Wi-Fi/4G/LTE antenna

I/O Interface-Internal
- 1 x MIPI-CSI connector
- 1 x 4-lane MIPI-DSI connector (Either one with LVDS connector, BOM option)
- 1 x LVDS connector 24-bit LVDS, backlight power: 12V, max 1A
- 1 x Touch connector
- 1 x Debug connector for console use

Storage Device
- 1 x Onboard 32 GB EMMC
- 1 x Internal Micro SD slot

Expansion Slot
- 1 x Full-size mini-PCIe for optional Wi-Fi/BT/4G LTE (PCIe 3.0, USB 2.0, SIM), support SIM card holder onboard
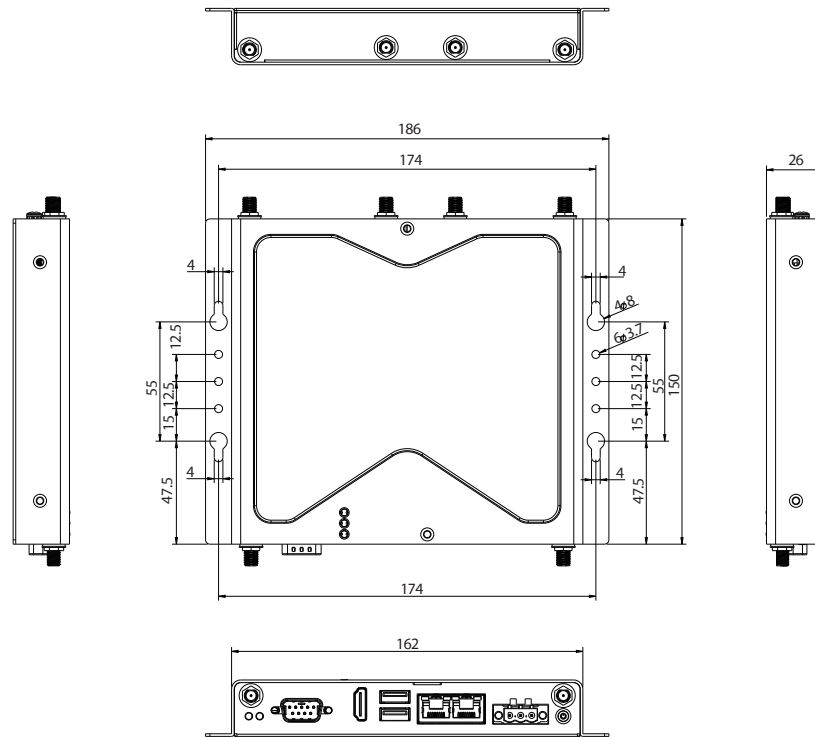- 1 x M.2 2230 Key E (USB 2.0, SDIO, UART)

Power Requirements
- Power input: 9-30 VDC input

Support OS
- Primary: Linux 5.4.70_2.3.3 Yocto® Project 3.0 (Zeus)
- Secondary: Ubuntu 20.04 LTS

Dimension Drawing

Dimensions
- 162mm (W) x 150mm (D) x 26mm (H) w/o wall mount bracket
- 186mm (W) x 150mm (D) x 26mm (H) w/ wall mount bracket

Construction
- Metal chassis with fanless design

Environment
- Operating temperature
  - Ambient temperature: -20°C~70°C
    (according to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- Storage temperature: -20°C to 85°C
- Relative humidity: 10% to 90% (non-condensing)
- Shock protection
  - EMMC/M.2: 50G@wall mount, half sine, 11ms (operation),
    IEC60068-2-27
- Vibration protection with EMMC/ M.2 condition:
  - Random: 2Grms@5~500 Hz, IEC60068-2-64
  - Sinusoidal: 2Grms@5~500 Hz, IEC60068-2-6

Certifications
- CE Approval
  - EN61000-6-2
  - EN61000-6-4
- FCC Class A

Ordering Information
- **CPS 50-N01 (P/N: 10JC0005000X0)**
  NXP i.MX8M Plus Cortex®-A53 quad core 1.6 GHz fanless system,
  2GB LPDDR4, 32GB eMMC

- **24V, 60W AC to DC power adapter w/o power cord
  (P/N: 7400060054X00)**