



Main Features

- NXP i.MX 8M Plus Cortex®-A53 quad core processor
- 1 x HDMI
- 1 x USB 3.0, 2 x USB 2.0
- 3 x COM
- 2 x GbE LAN ports
- 1 x Full size Mini PCIe for optional Wi-Fi/BT/4G LTE (PCIe, USB 2.0, SIM)
- 1 x Internal M.2 (Key E) 2230 (USB 2.0, SDIO, UART)
- 1 x Internal M.2 (Key B) 3042/3052 (USB3.0, SIM)
- Modular rear I/O design for easy customization
- Support 9-30 V DC input

Product Overview

CPS 50 is a fanless PC powered by NXP i.MX 8M 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.MX 8M 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@30Hz, 1920 x 1080@60 GHz

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, CTX, RTX 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

- 2 x DB9 for RS 232/485 (TX, RX 2 wire only)
- 1 x CAN Bus 2.0B
- 4 x GPI and 4 x GPO (programmable to GPI or GPO)
- 1 x USB 2.0 Type A
- 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 24Bit LVDS, backlight power: 5V/12V, Max. 1A
- 1 x Touch connector
- 1 x Debug connector for console use
- 1 x Speaker out & 1 x Mic in Pin Header (Optional)

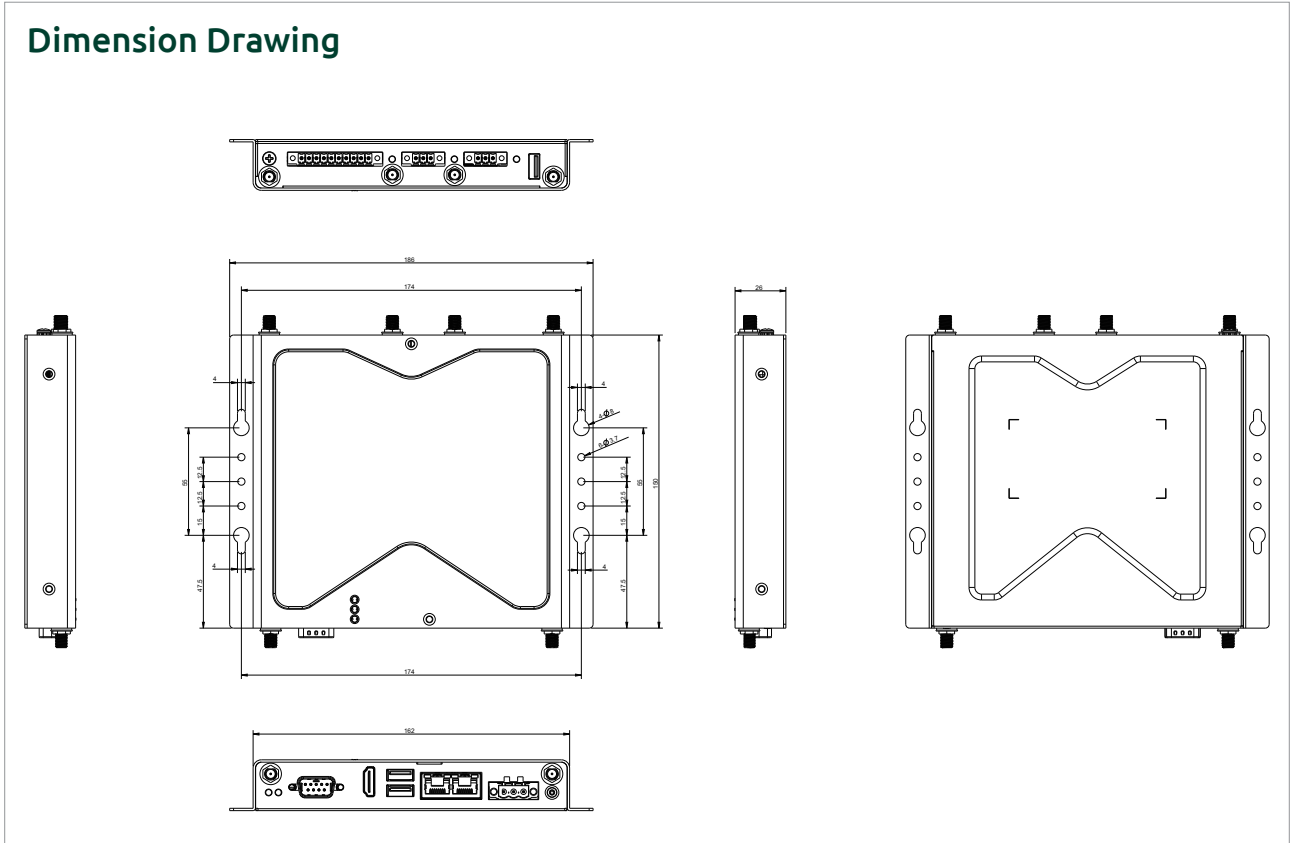
Storage Device

- Onboard 32 GB eMMC
- 1 x Internal Micro SD slot

Power Requirements

- Power input: 9-30VDC input

Dimension Drawing



Expansion Slot

- 1 x Full size Mini PCIe for optional Wi-Fi/BT/4G LTE (PCIe 3.0, USB2.0, SIM), support SIM card holder onboard
- 1 x M.2 (Key E) 2230 (SDIO, UART)
- 1 x M.2 (Key B) 3042/3052 (USB3.0), support SIM card holder onboard

	USB	PCIe	UART	4G/LTE	Wi-Fi/BT
mini-PCIe	2.0	3.0	-	v	v
Internal M.2 Key E	-	-	v	-	v
Internal M.2 Key B	3.0	-	-	v	v

Support OS

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

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 EN61000-6-2/ EN61000-6-4
- FCC ClassA
- ROHS 2.0 (2015/863)

Ordering Information

- **CPS50-N02 (P/N: 10JC0005001X0)**
NXP i.MX8M Plus Cortex®-A53 Quad Core 1.6 GHz fanless system, 2GB LPDDR4, 32GB eMMC
- **24V,60WAC to DC power adapter w/o power cord (P/N: 7400060054X00)**