

ECU-150-12A1

High-Performance IoT Gateway with NXP i.MX8M Quad Cortex A53

NEW



Features

- High Performance Gateway with Ubuntu 22.04
- NXP i.MX8M Quad Core Cortex A53 1.3G CPU
- DDR4 4GB RAM, 32GB eMMC for system storage
- 2 x RS-232/485 isolated serial ports
- 2 x 10/100/1000 Ethernet ports
- Modular design with optional second stack for increasing functionality
- Compact, robust, fanless and cable-free
- Supports DIN mounts, SD cards and OTA firmware updates
- 10-30V DC Power and -40-70 °C Operating temperature
- Can be expanded with WiFi, 4G, Nb-IOT CAT-M, GPS, GNSS.
- Support Python3, Docker, Node-Red, InfluxDB, and more...
- Support ZeroTier for secure direct contact over LAN, WiFi and 4G



Introduction

The ECU-150-12A1 is an IoT gateway built on the i.MX8M platform, featuring a high-performance Quad Core processor. With its open platform design, it offers exceptional flexibility. The gateway includes two RS-232/485 isolated serial ports, two 10/100/1000 Ethernet ports, and a USB 3.0 port, ensuring seamless connectivity. It operates reliably in extreme temperatures ranging from -40°C to 70°C. Equipped with Mini-PCIe and M.2 slots, the ECU-150 allows easy integration of Wi-Fi/4G/5G modules. The gateway supports Ubuntu 22.04 Linux operating system that lets you easily install your favorite programs.

Specifications

General

- **Certification** CE, FCC
- **Mounting** Wall-Mount/ DIN-Rail
- **Power consumption** 8W @ 24V_{DC}
- **Power Requirements** 10 ~ 30 V_{DC}
- **Dimensions (W x D x H)** Basic unit: 30 x 100 x 93mm
Double stack: 55.1 x 100 x 93mm
- **Enclosure** Aluminum housing
- **Operating System** Ubuntu 22.04

System

- **CPU** NXP i.MX8M Quad Core Cortex A53 1.3G
- **Memory** LPDDR4 4GB
- **Indicators** LEDs for Power, LAN (LINK, ACT), Serial (Tx, Rx), Programmable
- **Storage** 32GB eMMC
- **SD Slot** 1 x Micro-SD slot
- **Display** N/A (Optional 1 x HDMI resolution 1280 x 720)
- **Watchdog** Yes
- **SIM Slot** 1 x Nano SIM slot
- **RTC** Yes
- **Security** TPM2.0
- **FRAM** N/A (Optional 128KB)

Communication

- **Serial Port** 2 x RS-232/485, 50 ~ 115200 bps
- **Isolation** 2500 V_{DC}
- **Ethernet Port** 2 x 10/100/1000 RJ-45 ports
- **USB Port** 1 x USB3.0
- **Expansion** Interface: 1x Mini-PCIe (Full-size)
Type: WiFi/Cellular/4G
Signal: USB 2.0 (Optional PCIe)

Environment

- **Operating Temperature** -40~70°C
- **Storage Temperature** -40~85°C
- **Humidity** 5~95% (non-condensing)

Examples of software support



ECU-150-12A1 comes preinstalled with Python 3



Secure access between hardware with ZeroTier.



Run your favorite software inside Docker.



Run Node-Red as standalone or inside Docker.



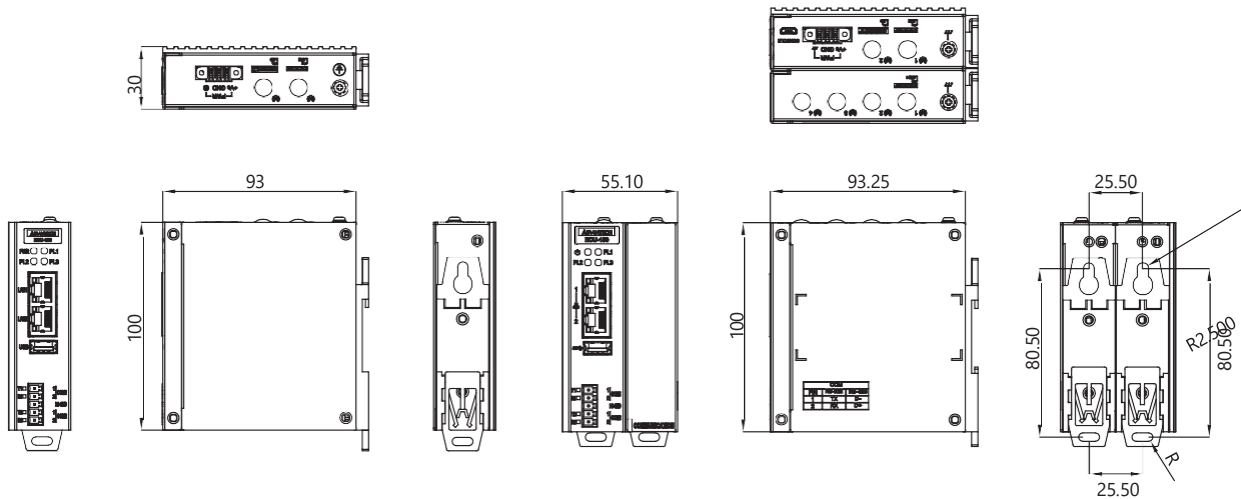
Run InfluxDB as standalone or inside Docker.

Dimensions

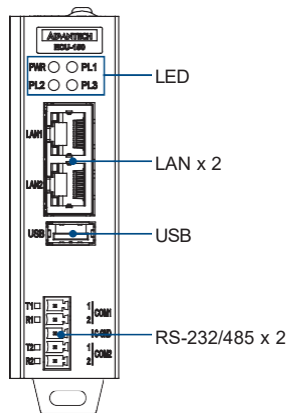
Unit: mm

Single Stack

Double Stack

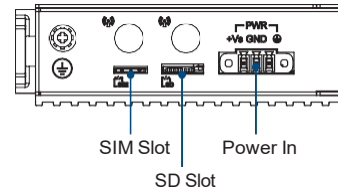


Front View

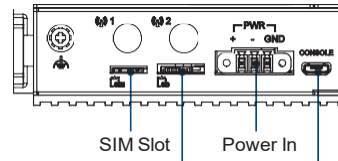


Top View

ECU-150-12A



ECU-150-12A1



SD Slot Micro USB Debug Port

Ordering Information

Part Number	RAM	eMMC	OS	IoT Software	TPM 2.0	LAN	COM	USB	Console	Country of Origin
ECU-150-12A1	4G	32G	Ubuntu 22.04	N/A	Yes	2	2	1	Micro USB	China
ECU-150-12A1U	4G	32G	Ubuntu 22.04	N/A	Yes	2	2	1	Micro USB	Taiwan

Optional Accessories

Wifi Module and Antenna

- **EWM-W172H01E** 802.11ac/a/b/g/n 2T2R Wi-fi + Bluetooth 4.2 Half
- **1750008717-01** Wifi 2.4GHz+5GHz dipole antenna
- **1750006043** Wi-Fi Coaxial Cable, 150 mm
- **9656EWMG00E** Half-size miniPCIe to miniPCIe bracket set

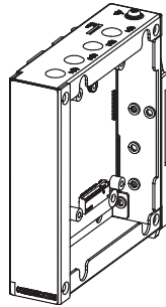
Cellular Module and Antenna

- **96PD-EC25EFA** LTE Cat 4 Module with GNSS
- **1750006264** SMA(F) Cable, 15 cm
- **1750008303-01** Antenna AN0727-64SP6BSM
- **96PD-MDG200AU0** AMIC 4G.Cat4 Socket Modem(US)
- **1750006264** SMA(F) Cable, 15 cm
- **1750008303-01** Antenna AN0727-64SP6BSM

Stackable Extension Kits

ECU-150P-M1A

2nd stack expansion module support 1 x M.2



Specifications

Interface	1 x M.2 B key 3052
Signal	USB3.0/PCIE
SIM Slot	1 x Nano SIM card slot

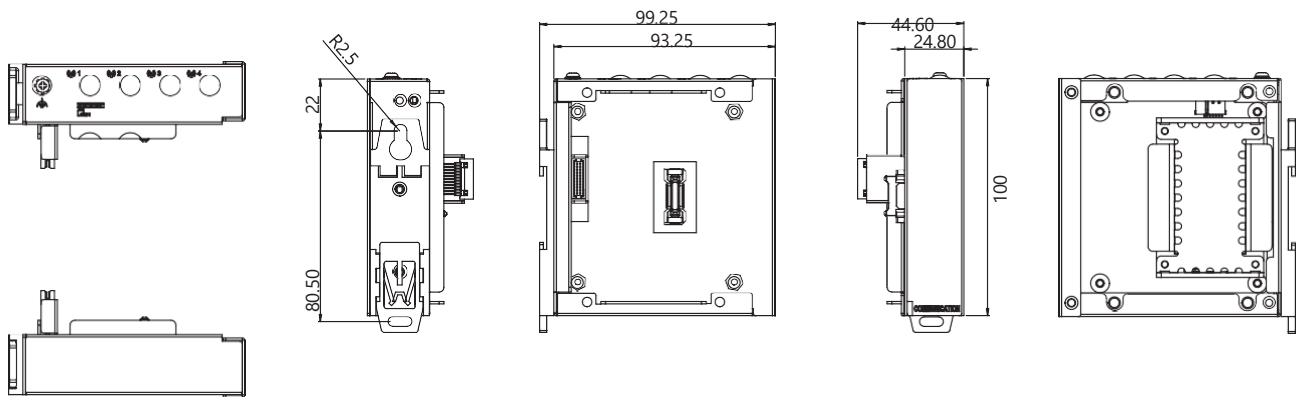
Ordering Information

Part Number	Description
ECU-150P-M1A	2nd stack expansion module support 1 x M.2

5G Module Supported

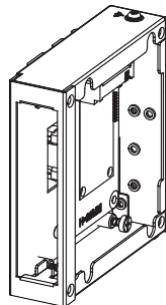
Manufacturer	Model
Quectel	RM500Q-GL
Quectel	RM502Q-AE (North America)
Unicom	CU-QM1
Fibocom	FM-150-AE
Gosuncn	GM800

Dimensions



ECU-150P-D1A

2nd stack expansion module support 1 x iDOOR



Specifications

Interface	1 x Mini PCIe (full size)
Signal	USB2.0/PCIE

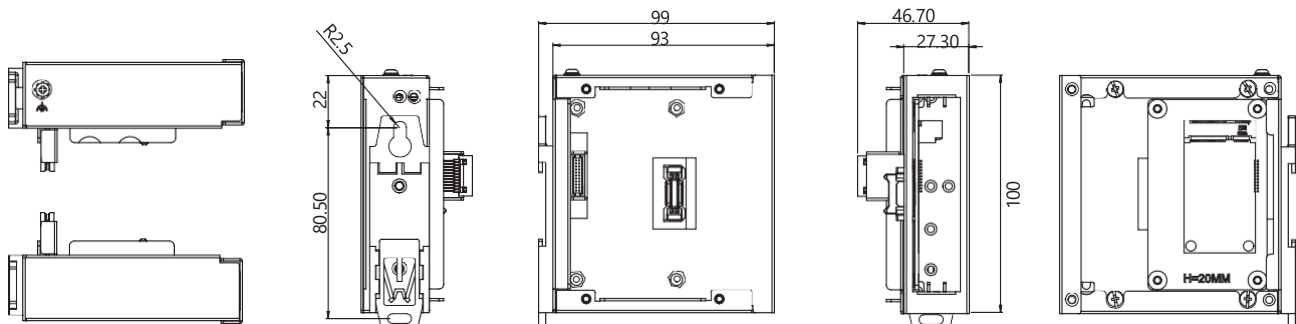
Ordering Information

Part Number	Description
ECU-150P-D1A	2nd stack expansion module support 1 x iDOOR

Optional iDoor Modules

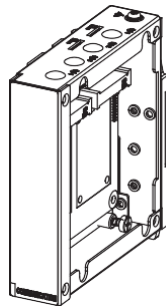
Part Number	Description
PCM-24D2R2-BE	Isolated RS-232, DB9 x 2, (USB type)
PCM-24D2R4-BE	Isolated RS-422/485, DB9 x 2, (USB type)
PCM-24D4R4-BE	Non-Isolated RS-422/485, DB37 x 1 (USB Type)
PCM-26D2CA-BE	SJA1000 CANBus, Lattice, CANOpen, DB9 x 2

Dimensions



ECU-150P-P2A

2nd stack expansion module support 2 x mPCIe



Specifications

Interface	2 x Mini PCIe (full size)
Signal	Slot1: USB2.0/PCIe Slot2: USB2.0
SIM Slot	2 x Nano SIM card slot

Ordering Information

Part Number	Description
ECU-150P-P2A	2nd stack expansion module support 2 x mPCIe

Dimensions

