

ECU-150

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



Features

- NXP i.MX8M Quad Core Cortex A53 1.3G CPU
- DDR4 2/4GB RAM, 16/32GB 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 SD cards and OTA firmware updates

Introduction

The ECU-150 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 Linux operating system and is bundled with the user-friendly EdgeLink configuration tool, empowering system integrators to develop precise applications for solar and electricity generation, and factory automation, which often demand extensive data collection, cloud-based solutions, and video monitoring capabilities.

Specifications

General

- **Certification** CE, FCC, UL 62368, IEC-62368
- **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** Linux (see ordering information)

System

- **CPU** NXP i.MX8M Quad Core Cortex A53 1.3G
- **Memory** LPDDR4 2/4GB
- **Indicators** LEDs for Power, LAN (LINK, ACT),
Serial (Tx, Rx), Programmable
- **Storage** 16/32GB 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)

EdgeLink*

Protocol Support

SouthBound	NorthBound
IEC 60870-5-101	Modbus Server
IEC 60870-5-103	IEC 60870-104 Server
IEC 60870-5-104	WASCADA (WebAccess)
DL/T 645-2007	BACnet Server
DL/T 645-1997	OPC UA Server
IEC 62056-21	Data Transfer
ODBC	
JDBC	
OPCUA Client	
BACnet IP	
BACnet MS/TP	
SNMP	
Modbus Client	

- **PLC driver support** ABB/Advantech/Allen-Bradley/BECKHOFF/ DELTA/ FATEK/GE/Honeywell/Keyence/Mitsubishi/Omron/ Panasonic/Schneider/Sharp/Siemens/Toyopuc/ Wago 750/Yaskawa/Yokogawa
- **Programming** Linux C, Python
- **Configuration Tool** EdgeLink Studio
- **Data Monitoring** 20000 Tags MAX.
- **Cloud Connectivity(MQTT)** EdgeHub, Azure, AWS, Google Cloud IoT Core and more
- **Database Transmission** SQL Server, MySQL, ORACLE, FTP Server
- **VPN** Open VPN

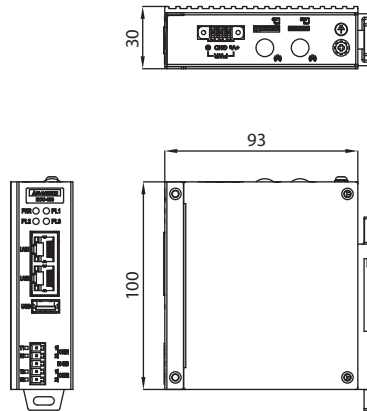
* EdgeLink is bundled with Yocto Linux version. Please refer to EdgeLink specification for more details.

** Support only 7 and 8 data bit

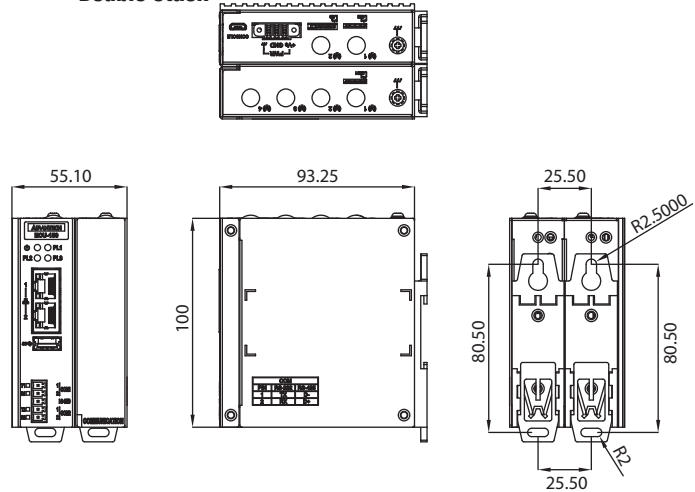
Dimensions

Unit: mm

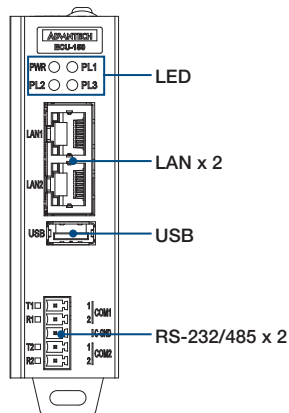
Single Stack



Double Stack

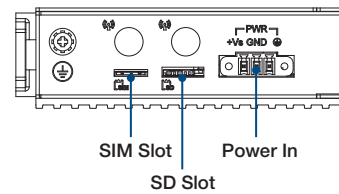


Front View

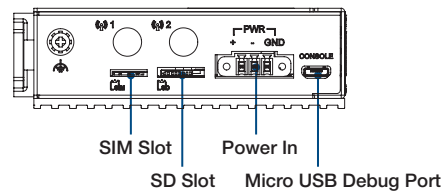


Top View

ECU-150-12A



ECU-150-12A1



Ordering Information

Part Number	RAM	eMMC	OS	IoT Software	TPM 2.0	LAN	COM	USB	Console	Country of Origin
ECU-150-12A	2G	16G	Yocto	WISE-EdgeLink	Yes	2	2	1	3pin COM on board	China
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

WiFi 5 + BT 4.2

- EW-M-W172H01E 802.11ac/a/b/g/n 2T2R Wi-Fi + BT 4.2 half-size mPCIe module
- 1750008717-01 WiFi 2.4GHz+5GHz dipole antenna (-40 °C ~ +65 °C)
- 1750006043 Wi-Fi Coaxial Cable, 150 mm
- 9656EWMG00E Half-size miniPCIe to miniPCIe bracket set

WiFi 5 + BT 5.0

- EW-M-W180H01E 802.11ac/a/b/g/n 2T2R Wi-Fi + BT 5.0 half-size mPCIe module
- 1750008717-01 WiFi 2.4GHz+5GHz dipole antenna (-40 °C ~ +65 °C)
(Recommend usage qty: 2pcs)
- 1750006043 Wi-Fi Coaxial Cable, 150 mm (Recommend usage qty: 2pcs)
- 9656EWMG00E Half-size miniPCIe to miniPCIe bracket set

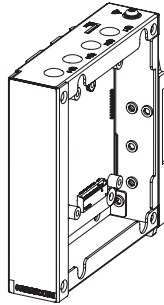
Cellular Module and Antenna

- 96PD-EC25EFA LTE Module Cat. 4, Mini-PCIe for EU, TW, IN, KR, SEA
- 96PD-EC25JFA LTE Module Cat. 4, Mini-PCIe for JP
- 96PD-EG25GGB LTE Module Cat. 4, Mini-PCIe for Global
- 1750006264 SMA(F) Cable, 15 cm
- 1751000532-01 Dipole Antenna, 11 cm (-40 °C ~ +65 °C)
- 96PD-MDG200AU0 AMIC 4G.Cat4 Socket Modem(US)
- 1750006264 SMA(F) Cable, 15 cm
- 1750008303-01 Antenna, 13cm (-40 °C ~ +80 °C)

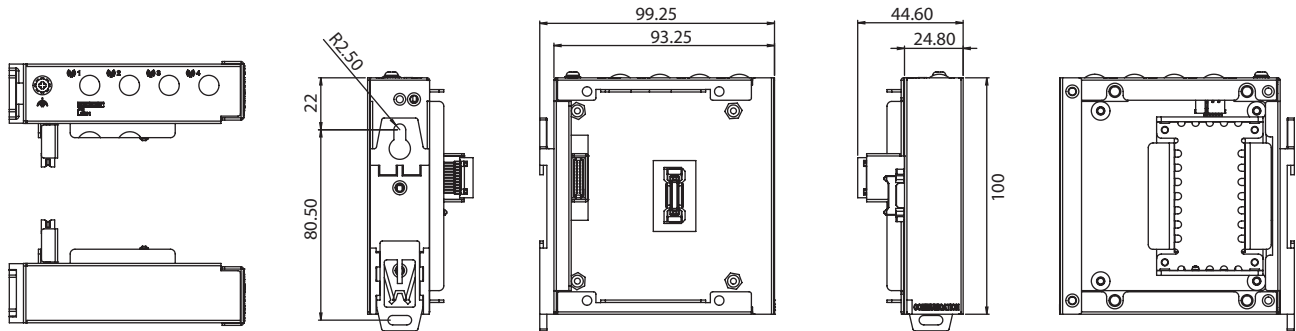
Stackable Extension Kits

ECU-150P-M1A

2nd stack expansion module support 1 x M.2



Dimensions



Specifications

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

Ordering Information

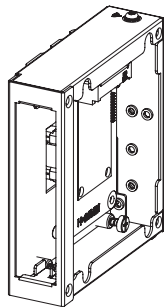
Part Number	Description
ECU-150P-M1A	2nd stack expansion module support 1 x M.2

5G Module Supported

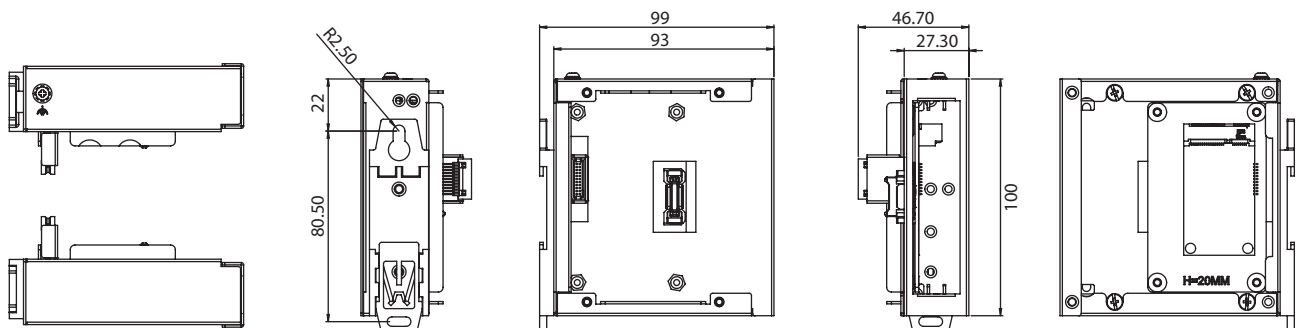
Manufacturer	Model
Quectel	RM500Q-GL
Quectel	RM502Q-AE (North America)
Unicom	CU-QM1
Fibocom	FM-150-AE
Gosuncn	GM800

ECU-150P-D1A

2nd stack expansion module support 1 x iDOOR



Dimensions



Specifications

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

Ordering Information

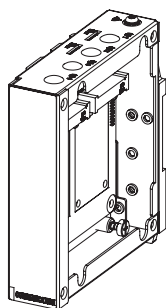
Part Number	Description
ECU-150P-D1A	2nd stack expansion module support 1 x iDOOR

Optional iDoor Modules

Part Number	Description
PCM-24D2R2-BE	2-Port isolated RS-232, DB9, mPCIe (USB signal)
PCM-24D2R4-BE	2-Port isolated RS-422/485, DB9, mPCIe (USB signal)
PCM-26D2CA-BE	2-Port CANBus, DB9, mPCIe (PCle signal)
PCM-26D2CA-CE	2-Port CANBus, DB9, mPCIe (USB signal)
PCM-24R2GL-AE	2-Port Gigabit Ethernet, Intel® I350, mPCIe, RJ45
PCM-2300MR-BE	MRAM, 4 MB, mPCIe

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

