

ECU-1051

Cloud enabled Intelligent Communication Gateway for IIOT application

NEW



Features

- TI Cortex A8 processor
- 2 x RS-232/485 serial ports
- 2 x 10/100 Ethernet ports
- 1 x Mini-PCle for WIFI/Cellular/4G
- Support web service for remotely on-line monitoring
- Supports SD cards and OTA firmware updates
- EdgeLink IoT software for data acquisition and cloud communication
- Wide Operating temperature: -40 ~ 70°C



EdgeHub



Introduction

For facility monitoring, distributed solar power, smart factory sector, especially cloud based applications which require a total wireless and Ethernet communication solutions, Advantech has released the ECU-1051 RISC-based industrial communication gateway. ECU-1051 has an open platform design with Cortex A8 processor, two 10/100 Ethernet ports and operating temperature range of -40~70°C. With Linux operating system and EdgeLink IoT software, ECU-1051 enable system integrators to develop applications which precisely fit their need.

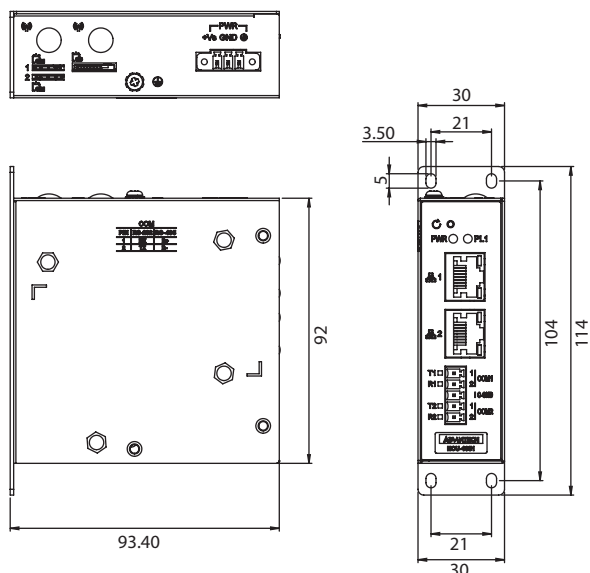
Specifications

System	CPU	ECU-1051TL-R10AAE		ECU-1051TL-R10AB	ECU-1051TL-R10ABU	ECU-1051E-R10AAE
	RAM			TI Cortex A8, 600MHz		TI Cortex A8, 300MHz
	Storage			DDR3L 256MB		DDR3L 128MB
	SD Slot	512MB NAND				
		1 x Micro-SD				
	SIM Slot	2 x Nano SIM				1 x Nano SIM
	LED Indicators	Power, LAN (LINK, ACT), Programmable				
	Real Time Clock	Yes				
I/O Interfaces	Watchdog Timer	Yes				
	TPM	NA				
	Serial Ports	2 x RS-232/485 (isolation optional), 5-Pin Terminal Block, 50 ~ 115.2kbps			2 x RS-232/485 (isolation 3000Vdc) 5-Pin Terminal Block, 50 ~ 115.2kbps	2 x RS-232/485 (isolation optional) 5-Pin Terminal Block, 50 ~ 115.2kbps
	LAN Ports	2 x 10/100 Base-T Ethernet (RJ45)				
	USB Ports	NA	1 x USB 2.0			NA
EdgeLink	Displays	NA				
	Mini-PCIE	1x Mini-PCle (Full-size) for Wireless Module Signal: USB 2.0				
	Protocol Support	SouthBound			NorthBound	
		IEC 61850 MMS Client*			IEC 61850 MMS Server*	
		IEC 61850 GOOSE Client*			IEC 61850 GOOSE Server*	
		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	200+ PLC drivers ABB/Advantech/Allen-Bradley/BECKHOFF/ DELTA/FATEK/GE/Honeywell/Keyence/Mitsubishi/Omron/Panasonic/Schneider/Sharp/Siemens/Toyopuc/Wago 750/Yaskawa/Yokogawa					
Programming Support	IEC 61131-3, Linux C, Python					
Configuration Tool	EdgeLink Studio					
Data Monitoring	2000 Tags MAX.				500 Tags MAX.	
Cloud Connectivity(MQTT)	EdgeHub, IoTSuite, Azure, AWS, Google Cloud IoT Core and more					
Database Transmission	SQL Server, MySQL, ORACLE, FTP Server					
VPN	Open VPN					
General	Certification	CE, FCC, UKCA				
	Dimensions (W x D x H)	93.7 x 92 x 30mm				
	Form Factor	Small Size				
	Enclosure	SGCC				
	Mounting	Wall-Mount/DIN-Rail				
	Weight(Net)	0.6kg				
	Power Requirement	10 ~ 30 Vdc				
	Power Consumption	1.2W @ 24Vdc				
	Power Connector	1 x 3-Pin Terminal Block				
	Operating Temperature	-40~70°C				
Environment	Storage Temperature	-40~85°C				
	Relative Humidity	95% (non-condensing)				
	Ingress Protection	IP30				
	Vibration Protection	2Grms, Random/Sine, 5 ~ 500Hz				

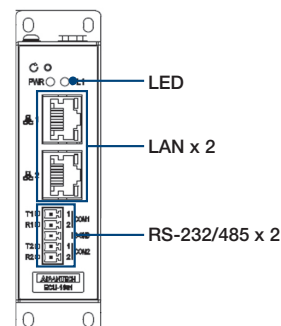
* Please refer to the EdgeLink specification for further details. Activation of the IEC-61850 protocol requires an additional fee.

Dimensions

Unit: mm

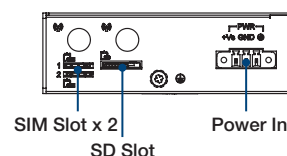


Front View

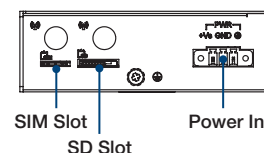


Top View

ECU-1051



ECU-1051E



Ordering Information

Part Number	CPU	RAM	NAND	OS	IoT Software	TPM 2.0	LAN	COM	USB	Console	Country of Origin
ECU-1051TL-R10AAE	TI Cortex A8, 600MHz	DDR3L 256MB	512MB	Yocto	EdgeLink	N/A	2	2	0	3pin COM on board	China
ECU-1051TL-R10AB									1		China
ECU-1051TL-R10ABU									1		Taiwan
ECU-1051E-R10AAE	TI Cortex A8, 300MHz	DDR3L 128MB							0		China

Optional Accessory

Cellular Module and Antenna

- 96PD-EC25EFA LTE Module Cat. 4, Mini-PCle for EU,TW,IN,KR,SEA
- 96PD-EC25JFA LTE Module Cat. 4, Mini-PCle for JP
- 96PD-EG25GGB LTE Module Cat. 4, Mini-PCle for Global
- 1750006264 SMA(F) Cable, 15 cm
- 1750005865 Dipole Antenna, 11 cm
- 96PD-MDG200AU0 AMIC 4G.Cat4 Socket Modem(US)
- 1750006264 SMA(F) Cable, 15 cm
- 1750008303-01 Antenna, 13cm

Wifi Module and Antenna

WIFI

- 96PD-RYUW131A1 Wi-Fi 4 2.4GHz mPCIe with Antenna and cable

WIFI+BT:

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

Micro SD Card

- 96FMMSDI-4G-ET-AT1 ATP 4G MICRO SD CARD I-GRD SLC(G)
- 96FMMSDI-8G-ET-AT1 ATP 8G MICRO SD CARD I-GRD SLC(G)

DIN-Rail Power Supply

- 96PSD-A20W24-MM A/D 100-240V 20W 24V Power Supply
- PSD-A40W24 DIN RAIL A/D 100-240V 40W 24V Power Supply

Adapters and Power Cables

- 96PSA-A60W24T2-3 AC100-240V to DC24V, 60W Adapter, C14 CORD END 2PIN
- 1702002600 Power cable (US) 1.8 M
- 1702002605 Power cable (EU) 1.8 M
- 1702031801 Power cable (UK) 1.8 M
- 1700000596 Power cable (China/Australia) 1.8 M

ECU-1051TL

Cloud-enabled Intelligent Communication Gateway for IIoT Applications

Packing List

Before installation, please ensure that the following items have been included in your shipment:

1. ECU-1051 Product

Overview

For distributed equipment management and maintenance, ECU-1051TL performs as a data publishing gateway from the field to the cloud. The operating temperature range is -40~70°C. This module is a cost-effective solution for industrial measurement and monitoring applications.



Figure 1. Product Overview

Specifications

Technical Specification of ECU-1051	
Mounting	Wall-Mount/ DIN-Rail
Power Requirements	10~30 V _{DC}
Ethernet Ports	2 x 10/100 Base-T RJ-45 ports
Serial Ports	2 x RS232 / RS 485
Indicators	Power, LAN(LINK, ACT), programmable
Watchdog	Built-in hardware & software
Storage	NAND Flash/ 512MB for system image 1 x Micro SD slot for data
Power Consumption	2.4W @ 24V _{DC}
Operating Temp.	-40 ~ 70°C
Warranty	2 years

For more information on this and other Advantech products, please visit our website at

<http://www.advantech.com>

<http://www.advantech.com/Products>

For technical support and service, please visit our support website at

<http://support.advantech.com.tw/support/default.aspx>

This manual is for ECU-1051TL.

Part No. 2043105101

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Edition 2

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Dimensions: (Unit: mm)

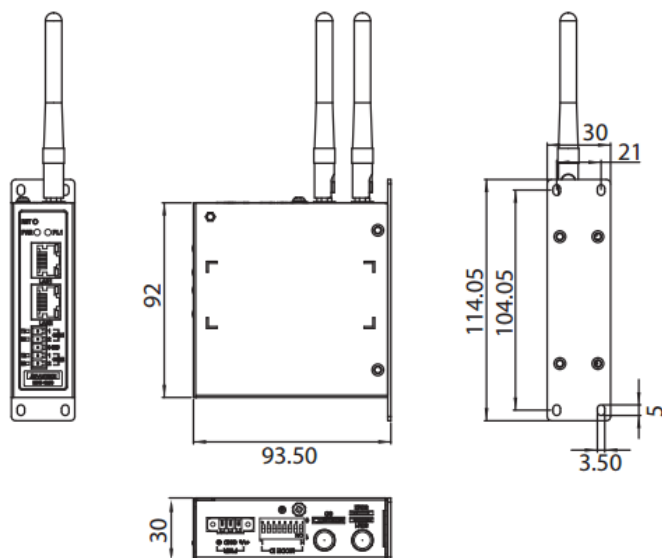


Figure 2. Dimension

Power Supply Wiring

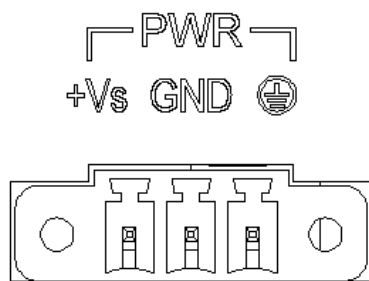


Figure 3. Power Supply

Pin Definition	Description
+Vs	PWR V+ DC power input
GND	PWR V- DC power input
	GND

Communication PIN Assignments

RS-232/485 Serial Ports (Pin Assignments)			
Pins	1	2	C-GND
RS-232	Rx	Tx	GND
RS-485	Data+	Data-	GND

Jumper Setting

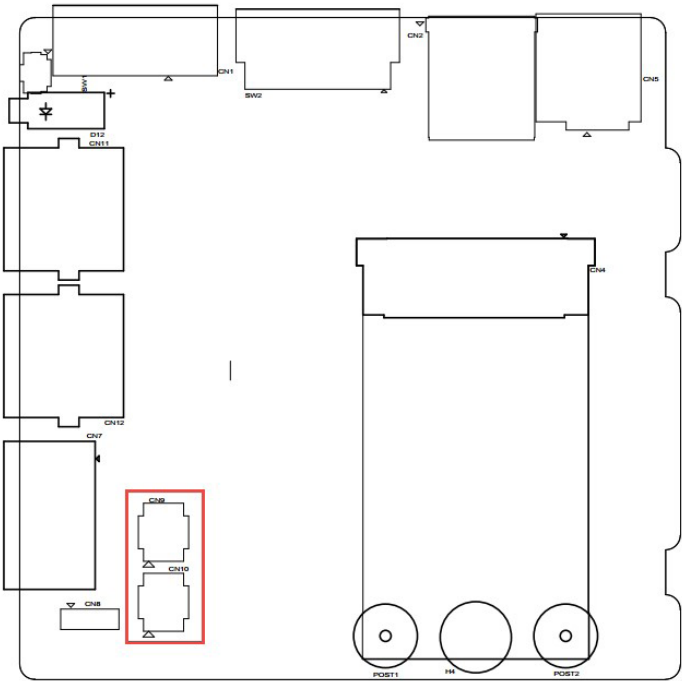


Figure 4. Jumper Location

Serial Ports (RS232/RS485)	CN9(COM1) / CN10(COM2)		
RS232 mode	(3-5)	(4-6)	
RS485 mode, No Terminator	(1-3)	(2-4)	Default



Installation

1. Wall Mount

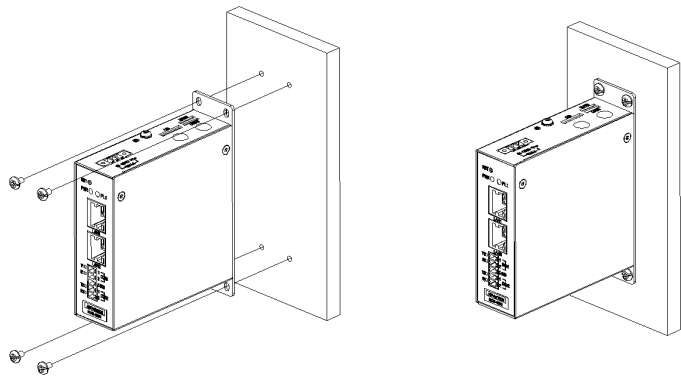


Figure 5. Wall Mount installation

2. DIN-Rail

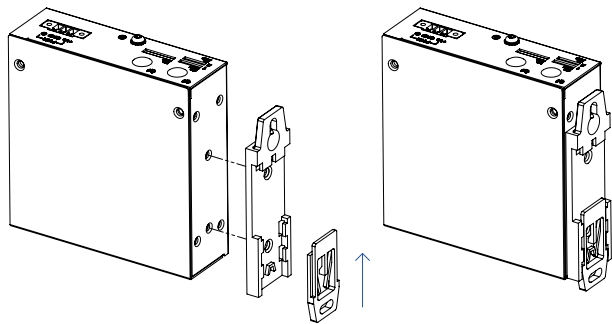


Figure 6. DIN-Rail Kit

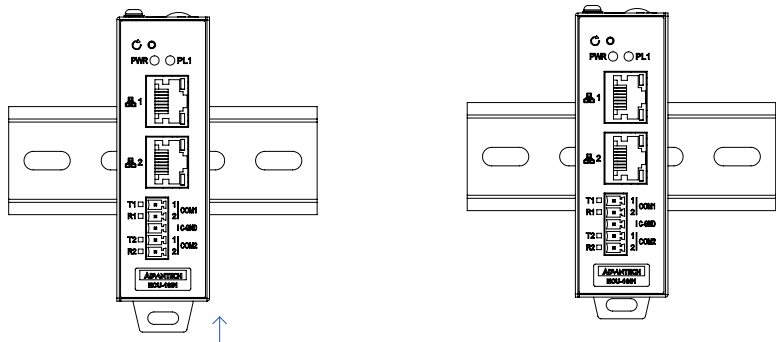


Figure 7. DIN-Rail installation

Installation (Cont.)

3. Wireless module & Antenna

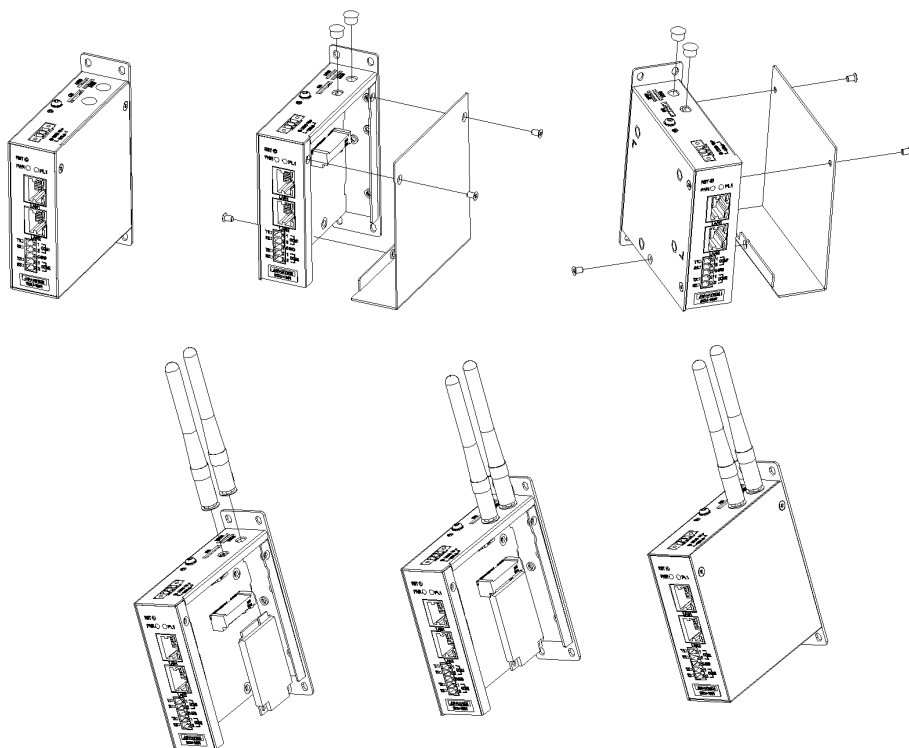


Figure 8. module & antenna installation

Software and User Manual

WISE-PaaS/EdgeLink Studio is for completing ECU-1000TL and its I/O configuration and management. The OS is Windows XP/Windows 7. The software installation package as well as user's manual can be acquired from the following path: <http://www.advantech.com/>

ECU-1152

TI Cortex A8 工业通讯网关
2 x LAN、6 x COM

NEW



CE FCC RoHS

特点

- TI Cortex A8 800 MHz CPU
- DDR3L512 MB 内存
- 1 GB Micro SD 卡系统存储
- 1 x Micro SD 插槽
- 6 x RS-232/485 隔离串口
- 2 x 10/100 Base-T 以太网口
- 1 x Mini-PCle 可扩展Wi-Fi/Cellular/4G
- 支持Web服务进行远程在线监控
- 支持Micro-SD卡和在线固件更新
- 支持 Modbus、IEC-60870 协议
- 支持Micro-SD卡数据采集
- RTLinux 操作系统
- 工作温度: -40 ~ 70°C

概述

对于需要全面的无线和以太网通信解决方案的太阳能、电力和工厂相关应用，研华开发了基于RISC的工业通信网关ECU-1152。ECU-1152 采用开放式平台设计，配备 Cortex A8 处理器、6 个 RS-232/485 隔离串口、2 个 10/100 以太网端口，工作温度为 -40 ~ 70°C。ECU-1152 配备 Linux 操作系统和开放式 Edgelink SDK，使系统集成商能够开发针对其应用需求的特定应用。

规格

一般

- 认证 CE, FCC (No RED 认证)
- 安装方式 壁挂型/ DIN 导轨
- 功耗 2.4W @ 24V_{DC} (典型)
- 电源 10 ~ 30 V_{DC}

系统

- CPU TI Cortex A8, 800MHz
- 内存 DDR3L 512MB
- 指示灯 可编程 LEDs电源, LAN (LINK, ACT), 串行(Tx, Rx)
- 存储 1 GB Micro SD 卡系统存储
- SD插槽 1 x Micro SD
- 看门狗 Yes
- 实时时钟 Yes
- Node ID 8-bit

通讯

- 串口 6 x RS-232/485
隔离3000 V_{DC}
- 串口速率 RS-232/RS-485: 50 ~ 115200 bps
- 以太网口 2 x 10/100 Base-T RJ-45 ports
- USB 1 x USB
- 无线 (可选) 接口: 1x Mini PCIe (full size)
类型: Wi-Fi/Cellular/4G
信号: USB

软件

- OS支持 RTLinux 3.12
- 配置工具 Advantech Edgelink Studio
- 协议支持 Modbus, IEC-60870
- 编程 Linux C
- PLC驱动支持 Mitsubishi, Siemens, Omron, Delta

环境

- 工作温度 -40 ~ 70°C
- 储存温度 -40 ~ 85°C
- 湿度 5 ~ 95% (non-condensing)

订购信息

- ECU-1152-R11ABE TI Cortex A8 工业通讯网关
2 x LAN, 6 x COM, 1 x Mini PCIe
- ECU-1152TL-R11ABE ECU-1152 w/ Edgelink SW
- 1950020136T001 DIN-Rail buckle

Wi-Fi 解决方案

- 96PD-RYUW131 2.4GHz Wi-Fi Full/Half Size Mini PCIe Card
- 1750006043 SMA(M) cable, 15 cm
- 1750000318 2dBi antenna for testing, 11 cm

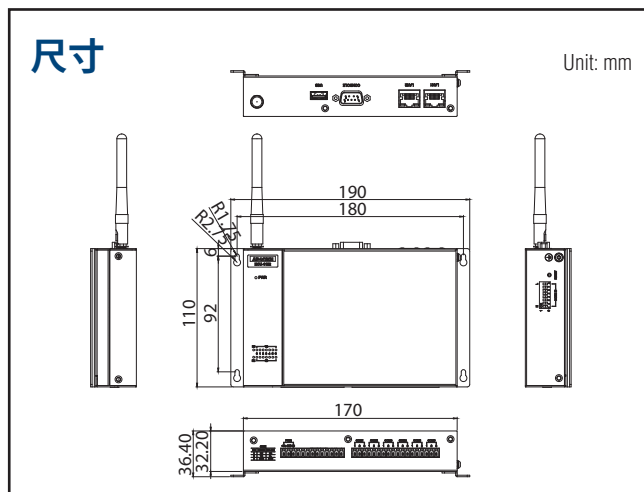
蜂窝解决方案 (不包括SIM卡)

- 96PD-EC25EFA LTE Cat 4 Module with GNSS
- 1750006264 SMA(F) cable, 15 cm
- 1750005865 Dipole antenna, 11 cm

存储解决方案

- 96FMMSDI-4G-ET-AT1 ATP 4G MICRO SD CARD I-GRD SLC(G)
- 96FMMSDI-8G-ET-AT1 ATP 8G MICRO SD CARD I-GRD SLC(G)

尺寸



ECU-1251

TI Cortex A8 Industrial Communication Gateway with 2 x LAN, 4 x COM Ports

NEW



CE FCC RoHS

Features

- TI Cortex A8 800MHz CPU
- DDR3L256MB RAM
- 1GB Micro-SD card for system storage
- 1 x Micro-SD Slot
- 4 x RS-232/485 isolated serial ports
- 2 x 10/100 Base-T Ethernet ports
- 1 x Mini-PCle for WIFI/Cellular/4G
- Support web service for remotely on-line monitoring
- Support SD card & on-line firmware update
- Support IEC-61850, IEC-60870-101/104 protocol
- Support Data logger on SD card
- Operation System: RT-Linux
- Operation Temperature -40~70°C

Introduction

For solar power, electricity and factory related applications which require a total wireless and Ethernet communication solutions, Advantech has released the ECU-1251 RISC-based industrial communication gateway. ECU-1251 has an open platform design with Cortex A8 processor, up to four RS-232/485 isolated serial ports, two 10/100 Ethernet ports and operating temperature range of -40~70°C. With Linux operating system and open Edgeline SDK, which enable to system integrators to develop applications which precisely fit their need.

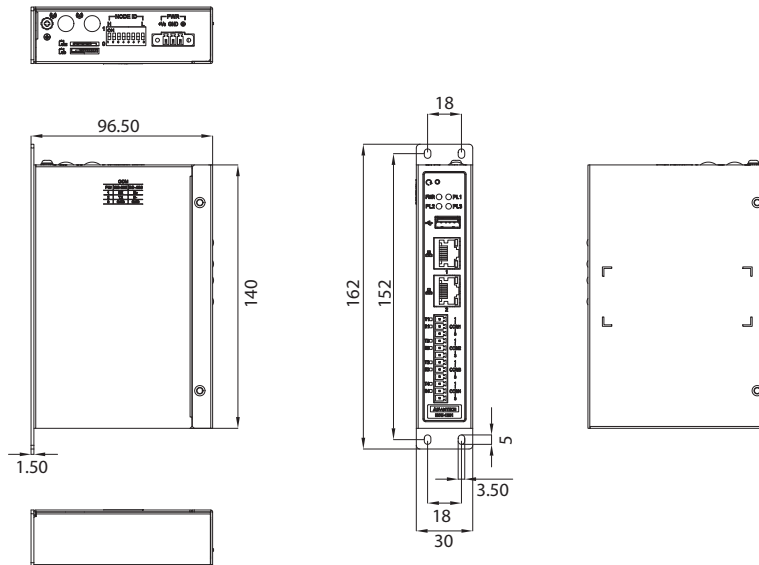
Specifications

		ECU-1251TL-R10AAE	ECU-1251TL-R10ABE
System	CPU	TI Cortex A8, 800MHz	
	RAM	DDR3L 256MB	
	Storage	4GB Micro-SD card	
	SD Slot	1 x Micro-SD	
	Real Time Clock	Yes	
	Watchdog Timer	Yes	
	Node ID	Yes	
	TPM	NA	
I/O Interfaces	Serial Ports	4 x RS-232/485 isolation 3000VDC, 1 x 12-Pin Terminal Block, 50 ~ 115.2kbps	
	LAN Ports	2 x 10/100 RJ-45	
	USB Ports	1 x USB 2.0	
	Displays	NA	
	Mini-PCIE	1x Mini-PCle (Full-size), Type: WIFI/Cellular/4G, Signal: USB 2.0	
WISE-Edgeline	Protocol Support	OPC-UA Client & Server, BACnet/IP Client & Server, Modbus RTU/TCP, IEC-61850*, IEC-60870-5-101, IEC-60870-5-103, IEC-60870-5-104	
	PLC driver support	Siemens/Mitsubishi/Omron/Allen-Bradley, Delta etc 200+ PLC drivers	
	Programming Support	Linux C, Python	
	Configuration Tool	WISE-EdgeLink Studio	
	Data Monitoring	2000 Tags MAX.	
	Cloud Connectivity	WISE-Edge365, MQTT, AWS, Azure, LwM2M, Google Cloud IoT Core and more	
	Database Transmission	SQL Server, MySQL, ORACLE, FTP Server	
	VPN	Open VPN	
General	Certification	CE, FCC, EN-62368-1, UKCA	
	Dimensions (W x D x H)	140 x 96.5 x 30mm	
	Form Factor	Small Size	
	Enclosure	SGCC	
	Mounting	Wall-Mount/DIN-Rail	
	Weight(Net)	0.6kg	
	Power Requirement	10 ~ 30 V _{DC}	10 ~ 48 V _{DC}
	Power Consumption	2.2W @ 24V _{DC}	
	Power Connector	1 x 3-Pin Terminal Block	
	Operating Temperature	-40~70°C	
Environment	Storage Temperature	-40~85°C	
	Relative Humidity	5 ~ 95% (non-condensing)	
	Ingress Protection	IP30	
	Vibration Protection	2Grms, Random/Sine, 5 ~ 500Hz	

*Please refer to the Edgeline specification for further details. Activation of the IEC-61850 protocol requires an additional fee.

Dimensions

Unit: mm



Ordering Information

Part Number	CPU	RAM	Storage for OS	OS	Configuration Tool	TPM 2.0	LAN	COM	USB	Console	Power Requirement	Country of Origin
ECU-1251TL-R10AAE	Ti Cortex A8, 800MHz	DDR3L 256MB	4GB	Yocto	WISE-EdgeLink	N/A	2	4	1	3pin COM on board	10 ~ 30 V _{DC}	China
ECU-1251TL-R10ABE	Ti Cortex A8, 800MHz	DDR3L 256MB	4GB	Yocto	WISE-EdgeLink	N/A	2	4	1	3pin COM on board	10 ~ 48 V _{DC}	Taiwan

Optional Accessory

Wi-Fi Solution

- **96PD-RYW131A1** WiFi 4 2.4GHz mPCIe with Antenna and cable

WIFI 5 + BT 4.2

- **EWM-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

- **EWM-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 Solution (SIM card is not included)

- **96PD-EC25EFA** LTE Cat 4 Module with GNSS
- **1750006264** SMA(F) Cable, 15 cm
- **1750005865** Dipole Antenna, 11 cm

Storage Solution

- **96FMMSDI-4G-ET-AT1** ATP 4G MICRO SD CARD I-GRD SLC(G)
- **96FMMSDI-8G-ET-AT1** ATP 8G MICRO SD CARD I-GRD SLC(G)