Arm-Based Compact Industrial DTU for IIoT Applications

- Armv7 Cortex-A7 @1.1GHz processor + 64MB RAM + 256MB Flash
- 1x Auto-sensing 10/100 Mbps Ethernet port
- Built-in Mini-PCIe slot for Cellular / Wi-Fi Module
- 1x Isolated software-selectable RS485/232 port
- 1x TF card slot for storage extend and data log
- 35mm DIN-Rail and wall mount Supported
- -40°C to +85°C Operating Temperature for harsh environment
- Hardware Watchdog and software demons for industrial reliabilities
- Linux 5.10 OS, prebuilt ElastPro IIoT gateway software to simplify applications development



Introduction

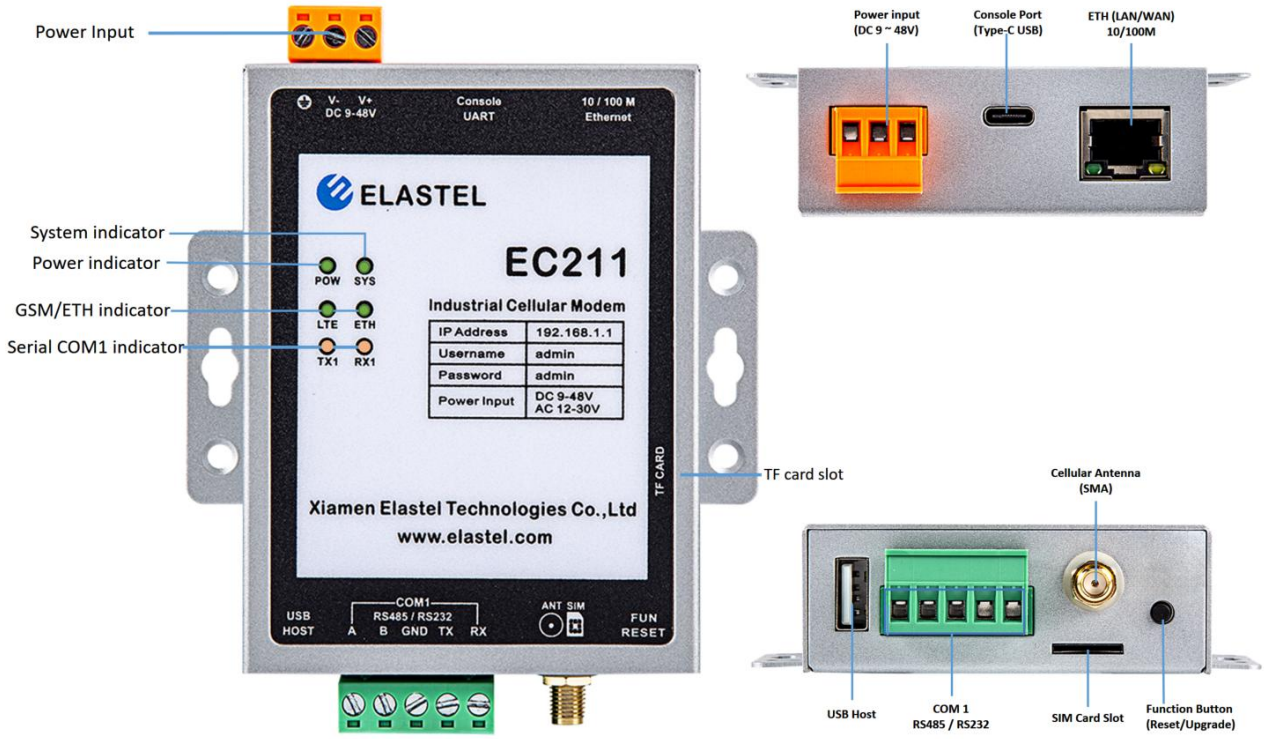
The Elastel EC211 is an Arm-based compact embedded computer designed as industrial DTU for data acquisition and processing applications. It comes with 1 x RS485/232 serial port and 1x 10/100 Mbps Ethernet port, as well as a built-in Mini PCIe socket to support 4G LTE/3G/2G/NB-IoT/Cat M1 cellular module and Wi-Fi module.



These versatile capabilities let users efficiently adapt the EC211 to kinds of serial and Ethernet devices, such as PLCs, meters, and sensors, to datacenter over wired or cellular network. Also as a serial-to-Ethernet Modbus Gateway, and expend to a variety of protocol gateway communications solutions.

With full industrial-grade design, built-in hardware watchdog, and Linux based OS equipped ElastPro IIoT software, guarantee this ruggedized DTU reliably working on variety applications for industrial.

Appearance



Specifications

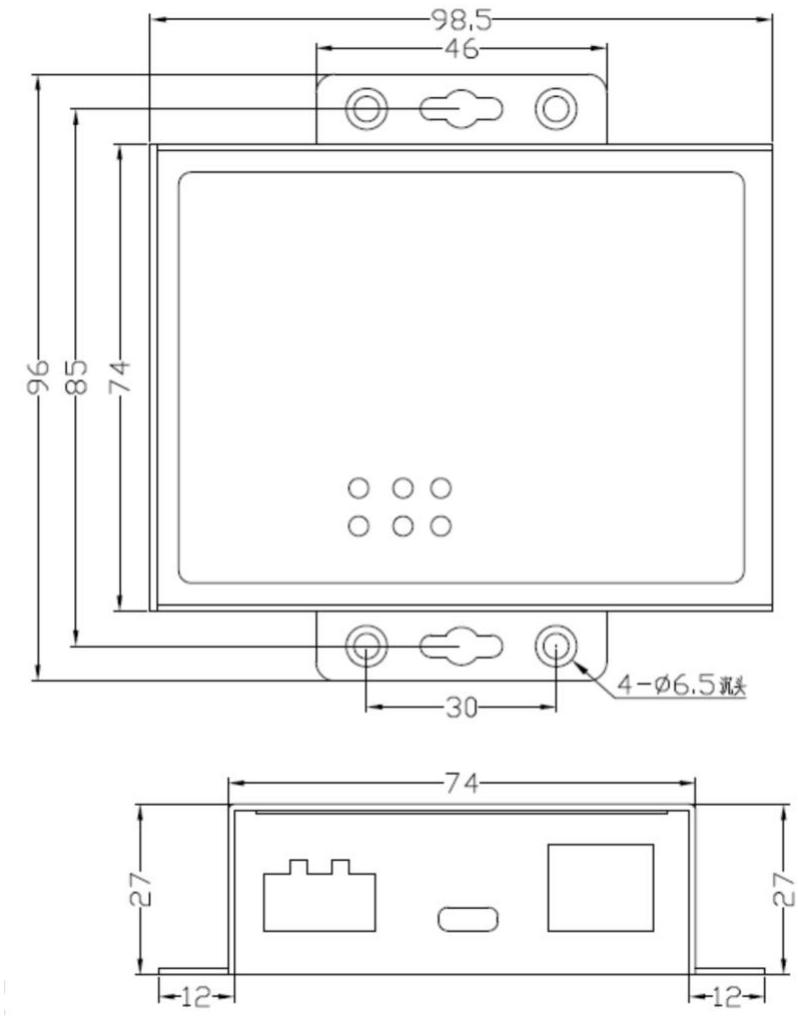
System	
CPU	ARM Cortex-A7 @1.1GHz
Pre-installed OS	Linux 5.10.160, with pre-installed ElastPro IIoT Gateway Software
DRAM	64MB DDR2
Storage	256MB SLC Nand Flash
Storage Slot	1x TF slots up to 64GB

Serial Interface	
Serial Ports	1 x RS-232/485
Baudrate	300 bps to 921.6 kbps
Data Bits	5, 6, 7, 8
Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 1.5, 2
Protection	Surge 4KV ESD ±15kV IEC61000-4-2 Air Discharge ESD ±15kV Human Body Model
Ethernet Interface	
Ethernet Port	1 x Auto-sensing 10/100 Mbps Ethernet for LAN/WAN configurable
Protection	Surge 2KV ESD ±15kV IEC61000-4-2 Air Discharge ESD ±15kV Human Body Model
Cellular Interface	
Cellular module Slots	1 x mini-PCIe slot for Cellular module/Wi-Fi module
Number of SIMs	1
SIM Format	Micro SIM (12mm*15mm)
Cellular Antenna Connector	SMA
Band Options	**NA Area:** 4G LTE FDD@ B2/B4/B12/B13; 3G WCDMA@ B2/B4/B5; Carrier Approval: Verizon, AT&T **EMEA/APAC Area:** 4G LTE FDD@ B1/B3/B7/B8/B20/B28A; 4G LTE TDD@ B38/B40/B41; 3G WCDMA@ B1/B8; 2G GSM@ B3/B8; **ANZ/LATAM Area:** 4G LTE FDD@ B1/B2/B3/B4/B5/B7/B8/B28; 4G LTE TDD@ B40; 3G WCDMA@ B1/B2/B5/B8; 2G GSM@ B2/B3/B5/B8; Other options please contact Elastel representative.
Wi-Fi	
Wi-Fi (optional)	Supported by mini-PCIe Wi-Fi module, or USB Wi-Fi dongle
Band	2.4GHz OR 5.15~5.85GHz IEEE802.11a/b/g/n/ac (WiFi5)
USB Host	
USB 2.0	1 x USB 2.0, for external peripheral devices
Power output	5V@500mA
Protection	Output Over Load protection ESD ±8kV IEC61000-4-2 Air Discharge

	ESD ±6kV Human Body Model
Other Interface	
Console Port	1 x UART type-C connector
Buttons	1x button for Reset and Upgrade
Power Parameters	
Standard Power	DC 12V/1.5A
Input Voltage	9 ~ 48 VDC, 12 ~ 30 VAC
Power Consumption	Working Mode: <5 W Peak Power: <10 W
Protection	Overvoltage & polarity reverse protection Surge 4KV ESD ±15kV IEC61000-4-2 Air Discharge ESD ±15kV Human Body Model
Indicators	
LED Indicators	Power x 1, System (programmable) x1, Cellular WAN x1, ETH x1, COM<x> trans x 1 (TX + RX)
Cellular LED status	Searching network: Slow flashing (200ms ON/1800ms OFF) Idle Status: Slow flashing (1800ms ON/200ms OFF) Transmission: Fast flashing (125ms ON/125ms OFF)
Buzzer	Built-in buzzer x 1, for Warning alarm (Programmable)
Reliability	
Alert Tools	External RTC with Backup button battery
Automatic Reboot Trigger	External WDT (watchdog timer)
Physical Characteristics	
Dimensions	98.5mm×96mm×27mm (L×W×H)
Housing	IP30 Metal
Installation	DIN-rail mounting Wall mounting
Weight	290 g (0.64 lb)
Environmental Limits	
Ambient Relative Humidity	5 to 95% (non-condensing)
Operating Temperature	-40 to 85°C (-40 to 185°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Package Contents	
Device	1 x EC211 device with Terminal Block preinstalled
Antenna	Mag-mount Cellular Antenna (SMA Male, 1 meter, 12dBi)
Installation Kit	1 x DIN-rail kit
Power Adapter	DC 12V/1.5A (optional)
Warranty	

Warranty Period	1 year

Dimensions



About Elastel

Elastel Technology Ltd is a global leading design and manufacturing company providing industrial-quality wireless solution for IoT and M2M. Founded in 2018, Elastel leverages its independent research and development and innovation to pursue its core mission: “Streamline IoT communication development, shorten and simplify the process of system implementation”

The company’s high-quality industrial Computer & Gateway hardware and software service enhance

the IoT communication efficiency and competitive advantages of its customers all over the world.

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Technical Support

Send email to Elastel Support center (support@elastel.com) for firmware upgrade, product documents, FAQ, technical support and more.