VT-M2M-DTU-LoRa

Industrial DTU

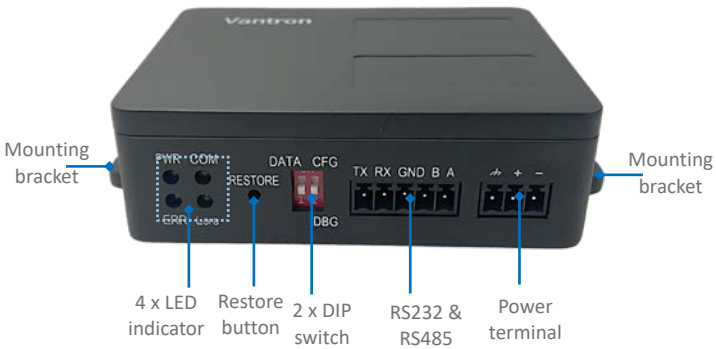
Product Brief

VT-M2M-DTU-LoRa is an entry-level data transmission unit (DTU) that leverages LoRa spread spectrum modulation technology that features high sensitivity for long-range, reliable wireless data transmission while consuming less than 3W of power under load.

VT-M2M-DTU-LoRa provides a reliable and efficient way to connect field devices to a central network. Field data from sensors or actuators is transmitted to the device via the RS232 or RS485 serial port. Such data is then transmitted through a LoRa gateway and finally received by a LoRa network server. This enables real-time monitoring and status tracking of field devices.

With a compact form factor and flexible deployment options, VT-M2M-DTU-LoRa simplifies installation and maintenance for users. Additionally, it supports 9V~36V wide input voltage and operates at an industrial-grade extended temperature range from -20℃ to +70℃, making it an optimal solution for industries such as smart agriculture, smart city, and smart logistics. Typical application of the device includes temperature and humidity control, hazardous air and water flow monitoring, and cargo tracking.

Exterior and Features

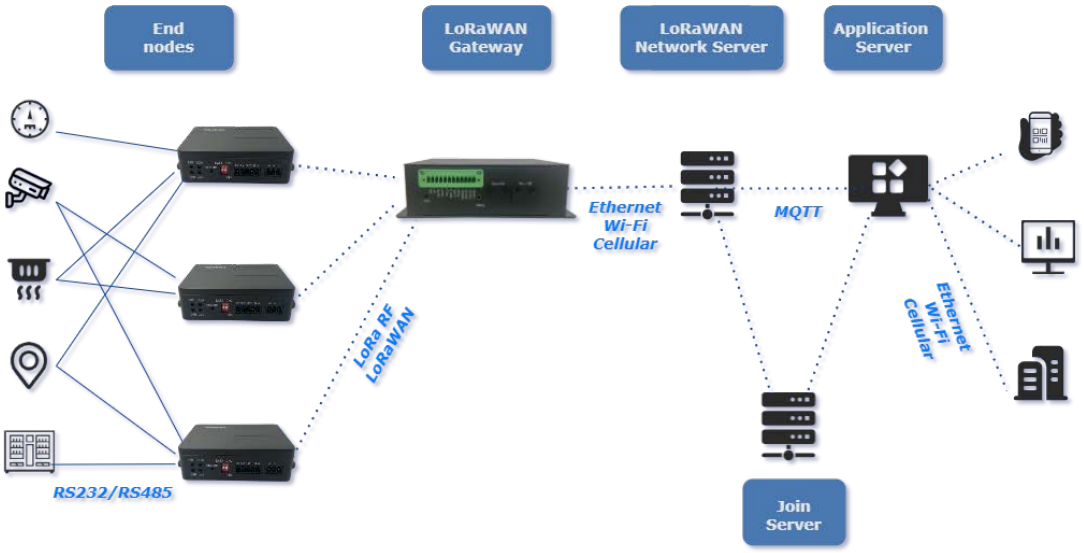


VT-M2M-DTU-LoRa
Dual COM & LoRa for data communication
Ultra-low power consumption
Long range, high sensitivity
Efficient fanless heat dissipation
Wide input voltage & temperature range
High reliability design (MTBF > 30,000H)
Vanity free, easy to deploy

VT-M2M-DTU-LoRa Industrial DTU Datasheet

VT-M2M-DTU-LoRa		
Communication	Wired	RS232/RS485
	Wireless	LoRa
LoRa Features	Frequency	915MHz
	Transmit power	15dBm ~ 22dBm
	Data rate	0.3~5.5kbps
	Receive sensitivity	-148dBm (at 10.4kHz, spreading factor 12)
	Transmission distance	1km (indoor)
	Antenna impedance	50Ω
I/Os	Serial port	1 x RS232 for data communication, device configuration & debug (115200, 8N1)
		1 x RS485 for data communication (115200, 8N1)
	DIP switch	2 x DIP switch for RS232 (Data mode: switch 1 up; Config mode: switch 1 down, switch 2 up; Debug mode: switch 1 down, switch 2 down)
	Antenna	1 x LoRa antenna
System Control	LED indicator	1 x Power indicator
		1 x Error indicator
		1 x Serial port status indicator
		1 x LoRa communication indicator
	Button	1 x Restore button (1~5s: Restart the device; > 5s: Factory reset)
Mechanical	Enclosure	Plastic
	Dimensions	110mm x 73mm x 28mm (including the mounting brackets)
	MTBF	> 30,000H
	Installation	Wall mounting
	IP rating	IP30
Power	Input	9V~36V DC
		1 x Power terminal (3-pin, 3.81mm)
	Consumption	< 3W (load)
Software	Configuration tool	VT Dtool
	Southbound protocol	Modbus
	Northbound protocol	MQTT
Environment Condition	Temperature	Operating: -20℃ ~ +70℃
		Storage: -40℃ ~ +85℃
	Humidity	Operating: 5%-95% RH (Non-condensing)
	EMC level	EMC Level 3
	Certification	FCC, IC

Application Topology



Use Cases

Cold Chain Logistics

Temperature monitoring in transit

Water Conservation

Leak identification, water quality tracking

Smart Farm

Soil moisture monitoring, irrigation schedule

LoRa™

Public Safety

Instant emergency alarm, report of user location

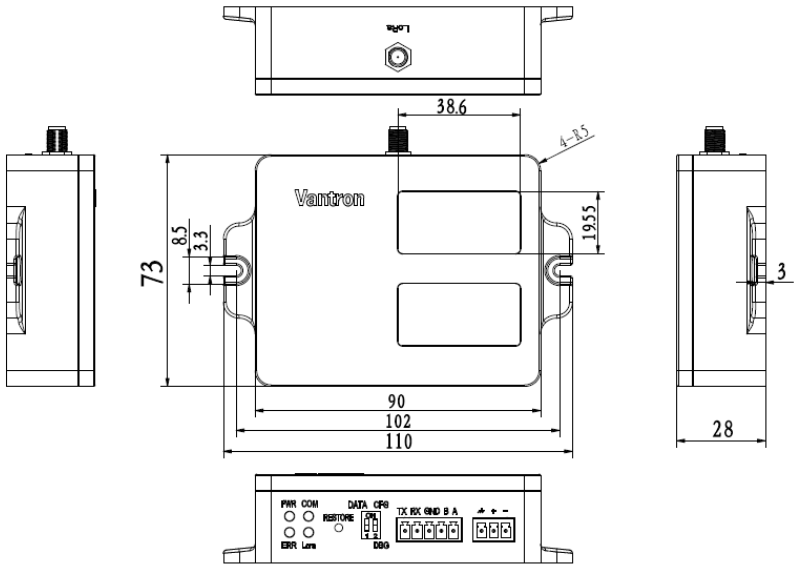
Smart Building

Motion detection, fire/smoke level monitoring

Patient tracking

Health data transfer, patient positioning

Product Outlines



Ordering Information

Ordering No.	Serial port	LoRa antenna	Voltage	Mounting brackets
VT-M2M-DTU-LoRa	RS232 & RS485	Yes	9V~36V	Yes

Packing list	
VT-M2M-DTU-LoRa industrial DTU	1
LoRa antenna (rubber stick)	1
12V 1A DC power adapter & power cord	1 kit
DC power connector	1
Serial port terminal connector	1

Optional accessory	
LoRa antenna (magnetic sucker)	1

Since its establishment in 2002 by two Silicon Valley entrepreneurs, Vantron Technology has been at the forefront of the connected IoT devices and IoT platform solutions. Today, Vantron boasts a global customer base that includes Fortune Global 500 companies. Its product lines cover edge intelligent hardware, IoT communication devices, industrial displays and BlueSphere cloud device management platform.

Vantron offers IoT communication devices that enable multi-protocol connections for industrial equipment and local data processing through edge computing. With abundant wired and wireless connectivity options, remote operations and maintenance have become easier than ever. Such devices can be deployed across different sectors such as smart retail, medical and warehousing. Moreover, Vantron's IoT solutions are designed to facilitate enterprises' digital transformation, streamline operations, enhance productivity, etc.