

AT-7021

Energy Monitoring RTU with 2 X Isolated RS-485 with Wi-Fi & Bluetooth



- Reliable Modbus RTU communication for Industrial Devices.
- GSM and Ethernet supports for Remote Monitoring and Control.
- On-board SD card storage ensures safe and continuous recording.
- Integrated real-time clock for accurate event tracking.

Introduction

The Energy Monitoring RTU combines robust energy data acquisition with dual isolated RS-485 channels for reliable Modbus communication, GSM and Ethernet connectivity for flexible remote access, on-board SD card storage for secure data logging, and an integrated real-time clock for precise timestamping.

Specifications

RTU Unit and Power

Operating Voltage	6V to 27V
Power Consumption	1.68W @24V, 1.44W @12V
SoC Family	32 bit ARM Cortex based processor
CPU	1 x Arm Cortex-A7(900MHz)
RAM	256 MB DDR3L
eMMC NAND Flash	512 MB
RTC	Built-in
Serial Interface	2 x RS485 with Isolation
USB Interface	1 x USB Host, 1*USB OTG
SD Card Slot	1 x Micro SDHC
Ethernet	1 x 10/100 Mbit/s Ethernet

Serial Interface

Number of Ports	2
Serial Standard	RS485
Modbus Support	Yes (RTU)
Baud Rate	Custom (Default 9600)
Parity	None, Even, Odd
Data Bits	8,9 Bit (Including Parity)
Stop Bits	1, 2
Serial Signal	RS485 : 2W D+, D-, GND
Terminating Resistor for RS-485	120 ohm
RS-485 Data Direction Control	ADDC (Automatic Data Direction Control)
Galvanic Isolation	2.5 KV

Ethernet

Standard	1 x 10/100 Mbit/s Ethernet
Number of Ethernet Ports	1
Ethernet Interface	Medium Dependent Interface (MDI)
Ethernet Port Specification	RJ-45, 10/100 Mbit/s
Timing Support	IEEE 1588 compliant timer (for clock synchronization)

SD Card Slot

SD Memory Card Specification	3.0
SDIO Card Specification Version	3.0
MMC System Specification Version	4.2, 4.3, 4.4, 4.41, 4.5, and 5.0
SD-XC card capacity	Up to 2 TByte
SPI mode support	Yes
Interface	8 bit

USB

USB Host	1 x USB 2.0
Connector type	Type A connector
USB Host/Client	1 x USB Host/Client
Connector type	Micro AB type USB connector
Speed	480 Mbit/s
Debug support	Yes

GSM

Region/Operator	EMEA/South Korea/Thailand/India
SIM Interface	1 x (U)SIM Interface
USB Interface	1 x USB 2.0s
LTE support	Yes
LTE-FDD Data Rate (Mbps)	150 (DL)/ 50 (UL)
LTE-TDD Data Rate (Mbps)	130 (DL)/ 30 (UL)
GNSS support	Yes
USB Serial Driver	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x / 5.x / 6.x / 7.x / 9.x
QMIWWAN Driver	Linux 3.4~5.4
eCall support	Yes
DTMF support	Yes
DFOTA support	Yes
(U)SIM card detection support	Yes

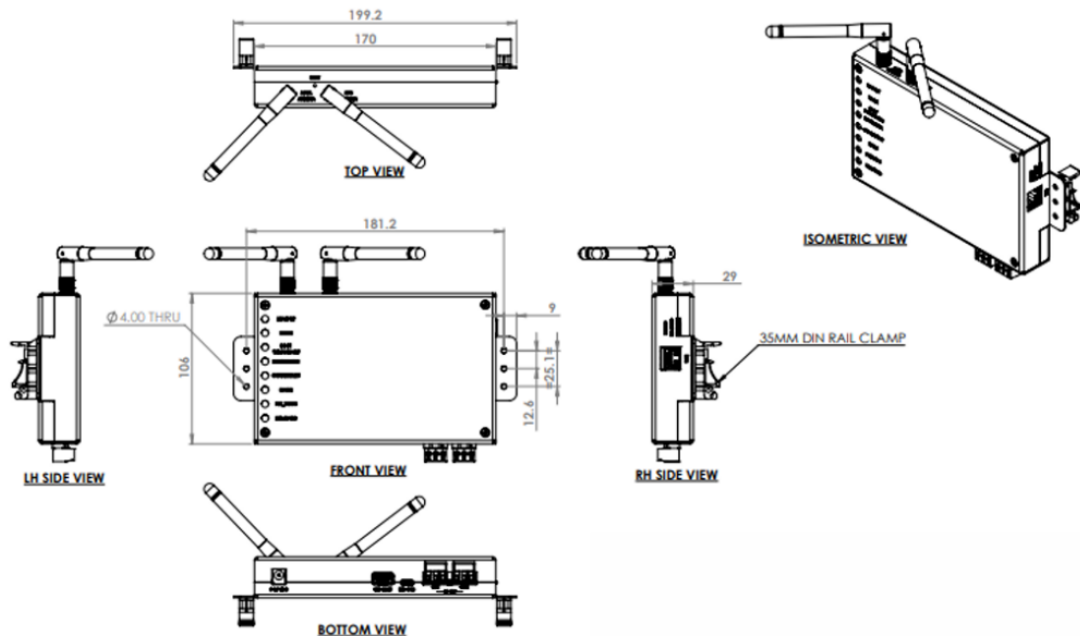
Wi-Fi and Bluetooth

Module Variant	Colibri iMX6ULL WB (Wi-Fi + Bluetooth version)
Wireless Module	Azurewave AW-CM276NF
Wi-Fi Standard	IEEE 802.11ac/a/b/g/n
Frequency Bands	Dual-Band : 2.4 GHz and 5 GHz
Max Data Rate	Up to 866.7 Mbps (theoretical)
Interface Limitation	Actual throughput limited by SDIO interface
Channel Bandwidth	20 MHz / 40 MHz / 80 MHz
Wi-Fi Modes	Station (Client), Access Point (AP), Wi-Fi Direct, Simultaneous STA + AP
Bluetooth Version	Bluetooth 5.0
Bluetooth Modes	BR/EDR (Basic Rate / Enhanced Data Rate), BLE (Bluetooth Low Energy)

Environmental

Operating Temperature	-20°C to 85°C
Storage Temperature	-40°C to 100°C

Dimensions



Order Information

Part No.	Description
AT-7021	Energy Monitoring RTU with 2 x Isolated RS485 with Wi-Fi & Bluetooth
AT-7020	Energy Monitoring RTU with 2 x Isolated RS485

