

DinBox RTU M4

Industrial GPRS/LTECat.M1 RTU

Designed by Bausch Datacom!

GPRS RTU

The DinBox RTU M4 is a low-cost micro RTU with built-in wide range AC power supply. The power supply comes with a supercap back-up, in order to ensure the required energy to communicate with the SCADA system, even after a mains power supply disconnect. Direct WAN communication is possible thanks to the built-in Sierra Wireless communication module. Everything is managed by a powerful Cortex M4 microcontroller. Finally, the RTU is built into a DIN rail mountable housing.



Product Highlights

- 4G LTE Cat-1/2G GPRS fallback
- IEC 60870-5-104/Modbus mapping
- MQTT/Modbus mapping
- I/O
- Ethernet Routing
- TLS Security & VPN IPsec IKE v1
- Supercap 'Last gasp'

Typical Applications

- Substation IP communication with SCADA systems or central dispatch
- IEC-60870-5-104 protocol between substation and control station
- SCADA installations in industries such as power and distribution, water and gas applications, oil and gas production
- IoT applications with MQTT/Modbus mapping
- Distributed Control Systems (DCS), PLC...
- Alarm management through SMS with ACK

BAUSCH DATACOM

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DinBox RTU SL specifications

The DinBox RTU M4 uses IEC 60870-5-104 to communicate as a slave with the SCADA system (master). Other protocols can be implemented. The DinBox has 8 active digital inputs, which enable sending events when a change has been detected. Furthermore, it has 2 digital outputs which can be controlled via SCADA commands, and 2 analogue inputs to monitor. Thanks to the modbus master implementation and the modbus-to-IEC104 mapping the DinBox RTU M4 can be used as a gateway to connect other modbus slave IEDs. Authentication, integrity and security are provided per application or service running on the RTU by protecting the transport layer of the protocol stack with TLS (Transport Layer Security). Integrating TLS in a non-TLS SCADA setup can be done by installing a TLS Proxy service. This service runs on the trusted network and serves as an endpoint towards the TLS RTU and proxies the data between the RTU and the backoffice.

Housing

- Type: Phoenix Dinrail enclosure
- Housing material: Reinforced polyamide fiber
- Housing type: DINrail housing side element, two pieces necessary to close base element, 1,5mm thick.
- DINrail snapslot for easy DINrail mounting
- Color: green
- Dimensions housing: : 172 mm x 35 mm x 135 mm
- Ambient temperature (operation) -40°C +105°C
- Inflammability class acc. to UL 94: HB
- Power dissipation at 20°C in horizontal mounting position: 8.9W 18.3W
- IP51

Power Supply

- 85-264 AC or 9-25V DC
- Watchdog reset
- Supercap backup or NiMH rechargeable battery pack

Communication Engine

- Sierra Wireless CF3 HL footprint
- 3GPP
 - HL6528 – quad band GSM/GPRS & GSM Data
 - HL6528RD – quad band GSM/GPRS
 - HL8518 – dual band HSPA, GSM/GPRS/EDGE
 - HL8548 – quad band HSPA, GSM/GPRS/EDGE
 - HL7690 – FDE band LTE Cat-1
 - HL7692 – FDE band LTE Cat-1 with dual band GSM/GPRS/EDGE fallback
- LPWA
 - HL7800 – LTE Cat-M1, Cat-NB1
 - HL7802 – LTE Cat-M1, Cat-NB1 with dual band GSM/GPRS fallback
- SIM card and/or eSIM
- eUICC possibilities
- 50 ohm FME antenna connector

Communication Protocols

- IEC 60870-5-104
- NMDK-3085 ASCII
- FTP
- Modbus RTU
- Modbus TCP
- MQTT Client

Processors

- Cortex-M4 (STM32Fxx)

Firmware

- Dual memory flash bank redundancy
- Different local and remote update possibilities

Interface & Connectors

- RS-232 non-isolated (used for debugging)
- RS-485 / 2-wire galvanically isolated (used for Modbus connection)
- LAN 10/100Mbit/s
- MMC/SD memory card holder
- 8x DI active 24 Vdc
- 2x DO optomos 'solid state', 600 Vpeak / 90 mAmax
- 2x AI 0-5 Vdc, non-isolated, 12-bit single ended ADC

Security

- Authentication and Data Encryption via TLS (Transport Layer Security)
- VPN IPsec (IKE v1)

Diagnostics

- Detailed debug and trace information on different levels via different interfaces
- 4 status LEDs

Configuration

- Local via HTML GUI
- Remote via HTML GUI & Telnet commands

Certification

- CE

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