

InduBox GSM M4

Industrial GPRS/LTE Cat.1 (M1) Modem

Designed by Bausch Datacom!

GPRS/LTE Cat.1 (M1) Modem

The InduBox GSM M4 modem builds on the design robustness and component quality of 12 years of InduBox modem experience. It operates as a versatile communication device designed to provide flexible data communication solutions for industrial environments. It not only comes with a wide range AC power supply, but also includes a watchdog circuit to insure continuous operation. The modem uses a Sierra Wireless communication module and has galvanically isolated RS-232 and RS-485 interfaces. Everything is managed by a powerful Cortex M4 microcontroller. Lastly, the modem is built into a wall mountable and sealable housing with a separate terminal cover.



Product Highlights

- GPRS/LTE Cat. 1 (M1) Communication
- 1X I/O
- Serial transparent Communication
- RTU SCADA IEC 60870-5-104/Modbus RTU
- RTU IoT MQTT/ Modbus RTU
- Ethernet Routing
- TLS & VPN IPsec Security
- Supercap 'Last gasp'
- Modem Management System

Typical Applications

- GSM modem with 6 working modes
- 1. CSD
- 2. TCPserv
- 3. TCPclient
- 4. Basic TCP/IP router
- 5. RTU SCADA IEC 60870-5-104/Modbus RTU
- 6. RTU IoT MQTT/ Modbus RTU

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InduBox GSM M4 specifications

The InduBox GSM M4 modem configuration can be done locally via the HTML GUI (graphical user interface), through the LAN interface. The modem has 6 working modes :

1. CSD standard 2G GSM data connection, to connect a serial device
2. TCPserv used to IP connect a serial non-IP device in PULL mode
3. TCPclient used to IP connect a serial non-IP device in PUSH mode
4. Basic TCP/IP routing used to access a device with a standard TCP/IP LAN connection

Furthermore, thanks to the Bausch 'M4' design, it is possible to implement other functions on the InduBox GSM M4 hardware design; for example a modbus (RS-485) to IEC 60870-5-104 gateway. One other typical application of the IBGSM4 is transparent meter reading.

5. RTU SCADA IEC 60870-5-104/Modbus mapping to integrate Modbus devices in a SCADA environment
6. RTU IoT MQTT/Modbus mapping to integrate Modbus devices in a IoT environment

Housing

- Bausch InduBox IP51 housing
- Bottom enclosure and sealable terminal cover : ABS with self-extinguishing V0 additive
- Transparent cover : polycarbonate + self-extinguishing V1
- Dimensions with connector cover : 180 x 108 x 71 mm
- Dimensions without connector cover : 145 x 108 x 71 mm

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

Environmental

- Temperature in use -25°C / + 70°C
- Humidity in use 10% - 95% (non-condensing)

Communication Protocols

- IEC 60870-5-104 (optional firmware)
- MQTT (optional firmware)
- FTP
- Modbus RTU (optional firmware)
- Modbus TCP (optional firmware)

Processors

- Cortex-M4 (STM32Fxx)

Firmware

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

Interface & Connectors

- RS-232 full V.24, non-isolated (also used for debugging)
- RS-232 3-wire, galvanically isolated
- RS-485 2-wire, galvanically isolated
- LAN 10/100Mbps
- 1x DI non-active 5 - 25Vdc

Security

- Authentication and Data Encryption via TLS (Transport Layer Security)
- VPN IPsec ike v.1

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
- Mass Modem Management (firmware updates/Automatic Commissioning/Health Monitoring...)

Certification

- Tested and certified by Laborelec & ANPI
- DIN 43861-2 Basic device dimensions
- EN 55022 Information Technology Devices (IT) - Radio Alarm Features – Limits and Measurement Methods
- EN 550 32 Class B
- EN 62052-11 AC Electric Counter - General Requirements, Test and Test Conditions - Part 11: Measuring Equipment
- EN 61000-4-2 Electromagnetic Compatibility (EMC) Part 4-2: Test and measurement techniques - Electrostatic discharge resistance test.
- EN 61000-4-3 Electromagnetic Compatibility (EMC) Part 4-3: Test and Measurement Techniques - Examination of Resistance to Radiated Radiofrequency Electromagnetic fields
- EN 61000-4-4 Electromagnetic Compatibility (EMC) Part 4-4: Test and Measurement Techniques - Testing of Electrical Fast-Transient / Robust Resistances
- EN 61000-4-5 / Part 4-6 / Part 4-8 / Part 4-11 / Part 4-18
- ENV 50204

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