



SE-X500 - Remote Terminal Unit (RTU)

SE-X500 is a series of industrial computers which you can easily adapt to your needs by choosing from the available options.

- Energy-efficient **ARM11 700 MHz** processor
- **512 MB RAM** and **4GB NAND FLASH** memory
- Rich set of I/O interfaces: including **digital and analog inputs/outputs, RS-232/RS-485 serial ports**
- Economic **1-Wire bus**, typically used for reading temperature and humidity sensors
- Expandable hardware resources: **LTE/3G/GPRS, WiFi, ZigBee**



SE-X500

Basic information

- Designed for the needs of automation, telecommunications, remote supervision, and monitoring
- Fully configurable platform - you can setup hardware options of your device
- Full range of communications interfaces, including LTE/3G/GPRS modem
- Standard protocol support (e.g. MODBUS, DLMS/COSEM, DNP3, IEC 870-5-101/104 and OPC UA), possibility to install dedicated user protocols
- Web page visualization of current/archived data and remote control directly from the device or cloud service

Available Hardware Options

- **Serial ports:** 2x RS-232, 2x RS-485
- **Digital I/O:**
4x Digital Input, 4x Digital Output
- **Configurable Digital I/O:**
4x Digital Input/Output
- **Analog inputs:**
4x Analog Input
- **Communication interfaces:** Ethernet, 1-Wire, CAN, USB
- **Audio/Video:** HDMI, Audio Output
- **Expansion cards:**
Wi-Fi, ZigBee, LTE/3G/GPRS, Bluetooth, GPS
- **Other:** Extended temperature range

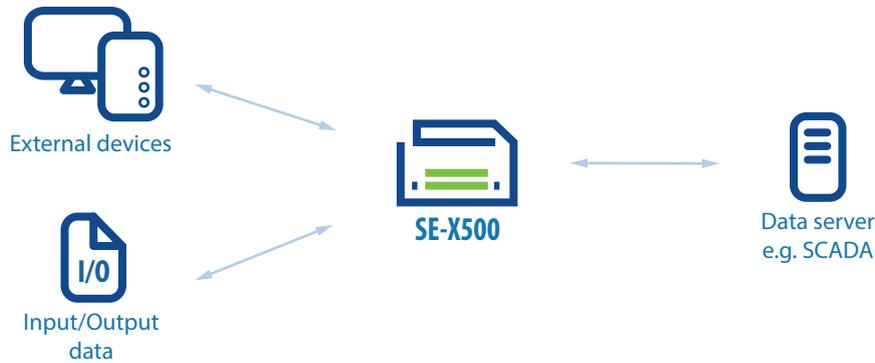
Software Properties

- New firmware based on Linux Kernel 3.6 guarantees stability and security of operation
- Expansion modules to increase the amount of available interfaces (see accessories section)
- Ready tools and pre-compiled packs, C/C++, JAVA, SQL, PHP, SSH and VPN support
- Developer tools and support, instructions, informational materials
- Remote software updates
- OPC UA (Server)
- MODBUS, DLMS/COSEM, DNP3, IEC 870-5-101/104

Applications

Typical method of use (3 functions: C-L-V)

- **Protocol and interface conversion (Convert)** - data is collected from input interfaces, converted and transmitted to output interfaces, e.g. 3G/GPRS, external modules
- **Data logger (Log)** - archiving and sharing data in a file format, database or with the use of external systems (SCADA)



You can configure the device, so it performs the following functions:

- PLC
- Telemetry module with data logger
- Serial port server
- Protocol and interface converter
- Programmable controller
- LTE/3G/GPRS/EDGE modem
- MODBUS Gateway/Router
- IEC 101/104 RTU, DNP3 RTU
- OPC UA Server and SQL database support
- Gateway
- LTE/3G/GPRS router, NAT

Adapted to Industrial Conditions:

- Low energy consumption
- RTC Battery-powered Real Time Clock (RTC)
- WatchDog function ensures hardware operation control of selected services
- Effective file systems used for FLASH memory, ensuring long, failure-free operation
- Compact, durable housing made from ABS plastic or aluminum, adapted to installation on a DIN bus
- Easy installation due to the use of disconnectable screw terminals
- No moving elements (fans, platter disks)
- Versions with extended operating temperature range: -25 ~ 80°C

Built-in LTE/3G/GPRS/EDGE*

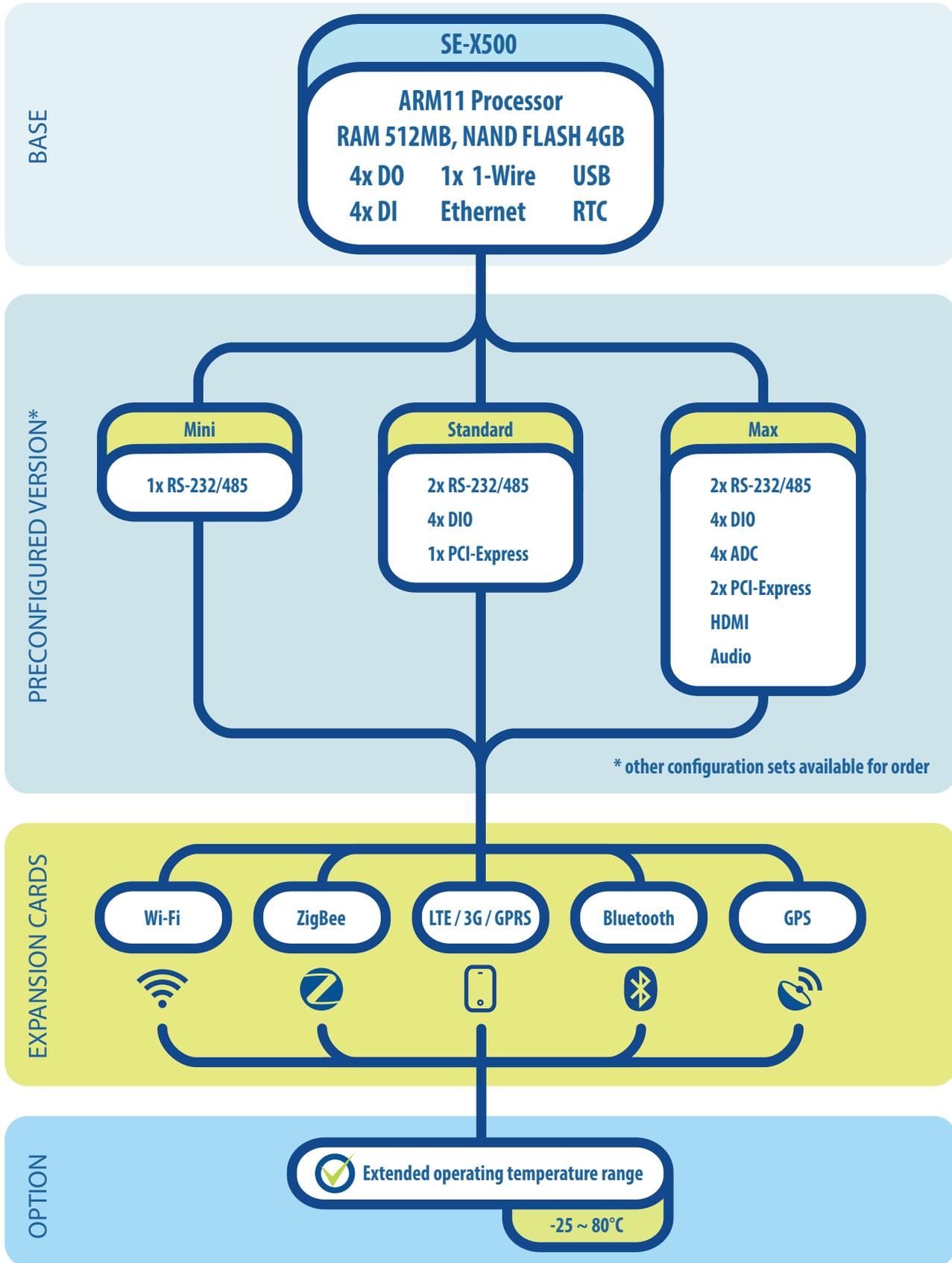
Modem for data LTE/3G/GPRS data transmission and SMS support. iMod has unique hardware-software features providing connection efficiency and economy:

- The device is equipped with Watchdog mechanism to ensure modem stability.
- Pre-installed software for constant verification of LTE/3G/GPRS connection and GPRS reconnect function.
- Multiplexing server provides 3 independent modem communication channels. Allows sending and receiving of SMS during LTE/3G/GPRS transmission.
- You can use telemetry SIM cards with dynamic IP addresses due to the use of DynDNS. VPN allows use of cards with non-public IP.

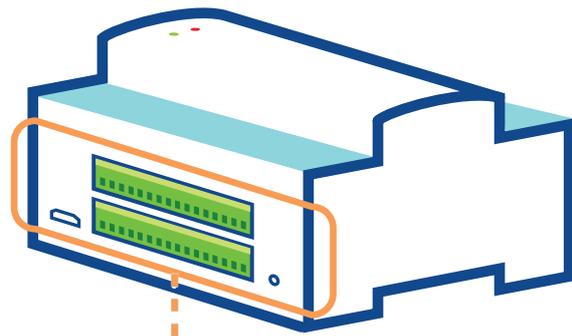
* depending on product version

Configuration Scheme

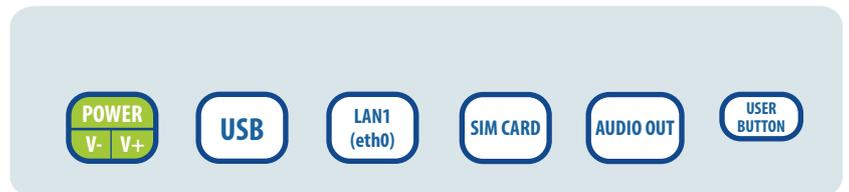
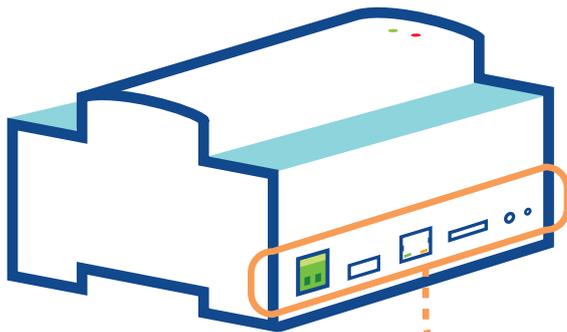
SE-X500



Pinout



SE-X500



Technical specification

SYSTEM

CPU	ARM11 700 MHz
RAM	512MB
Flash Memory	4096MB
Operating system	Linux 3.6
Real Time Clock	RTC, 240 byte SRAM, Watch Dog Timer

ETHERNET INTERFACE

1x Ethernet 10/100 Mbps (RJ45 connector)

SERIAL PORTS

RS-232 / RS-485 Ports 2x RS-232 (3 pins) / 2x RS-485 (2 pins)

USB PORTS

1x external USB 2.0 (host), 1x internal USB 2.0

INPUTS / OUTPUTS

Digital inputs (DI)	4x DI (0..5V DC)
Digital outputs (DO)	4x DO (0..30V), max. power efficiency: 500 mA
Configurable I/Os	4x DI/DO, max. power efficiency: 500 mA
Analog inputs	4x AI - range 0..10V DC (18bit resolution)
1-Wire	1x 1-Wire
CAN	1x CAN

STANDARD PROTOCOLS

MODBUS, DLMS/COSEM, DNP3, IEC 870-5-101/104 and OPC UA

POWER SUPPLY

10 ~ 30 V DC, 1000 mA

MECHANICAL PARAMETERS

Dimensions	91 x 106 x 61 mm
Weight	300g
Casing	ABS or Aluminum, DIN bus instalation

OPERATING AND STORAGE CONDITIONS

0 ~ 70°C, humidity: 5 ~ 95% RH (no condensation)
Extended operating temperature: -25 ~ 80°C, humidity 5 ~ 95% RH (no condensation)

AVAILABLE EXPANSION CARDS

Wi-Fi (IEEE 802.11 b/g/n, speed up to 150 Mbps, 64/128-bit WEP, WPA, and WPA2)
LTE/3G/GPRS modem, GPS module
Bluetooth, ZigBee

CONNECTORS AND PHYSICAL INTERFACES

1x RJ45 (Ethernet)
1x HDMI
2x monostable switch button
1x32 pin screw terminal
1x USB 2.0 type A
1x 2 pin power
1x SIM CARD slot

PROVIDER

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