

NPE9500

Programmable automation controller (PAC)

NPE 9500 is the newest series of industrial computers which you can easily adapt to your needs by choosing from the available options.

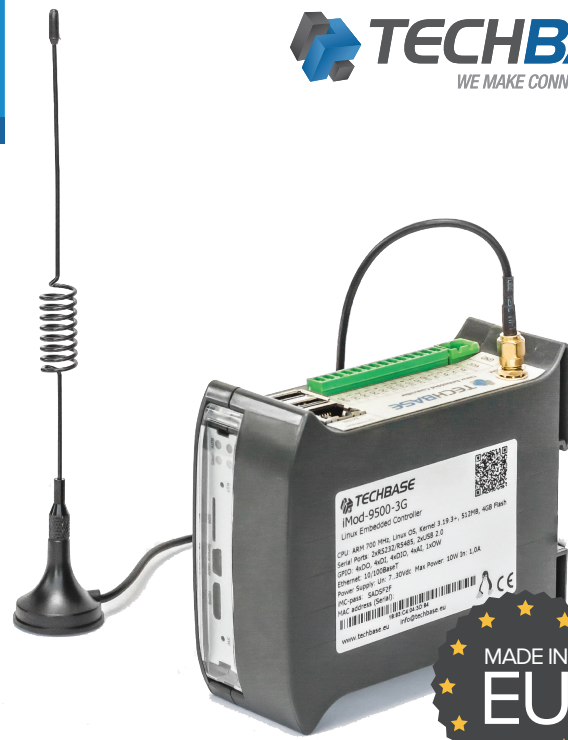
Energy-efficient **ARM11 700 MHz** processor

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**

Expandable resources: **LTE/3G, WiFi, ZigBee, Bluetooth**



NPE 9500



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 modem

Standard protocol support (e.g. MODBUS, SNMP, M-Bus), 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-232/485

Digital inputs/outputs:
4x Digital input, 4x Digital output

Configurable digital inputs/outputs
4x Digital input/output

Analog inputs:
4x Analog input

Communication interfaces: Ethernet, 1-Wire, 2x USB

Audio/Video: HDMI

Expansion cards:
Wi-Fi, ZigBee, LTE/3G/GPRS/EDGE, Bluetooth, GPS

Software properties

New firmware based on Linux Kernel 3.19.3+ guarantees stability and security of operation

Expansion modules to increase the amount of available interfaces (see accessories section)

Ready tools and pre-compiled packs, including C/C++, JAVA, SQL, PHP, SSH and VPN support

Developer tools and support, instructions, informational materials

Remote software updates

Updates for the innovative iMod platform

iModCloud – dedicated cloud computing service for telemetry, remote control and data sharing

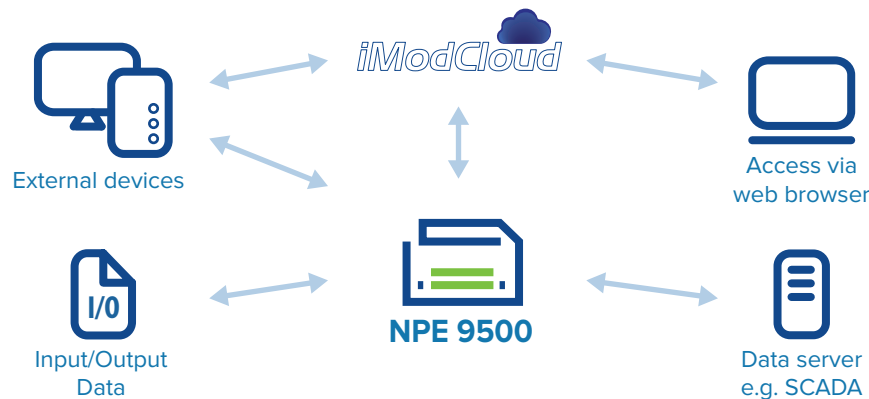
Full technical support through a dedicated portal, project cooperation via TECHBASE Solution Partner

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 or dedicated iModCloud)

Access via WWW (Visualize) - data is presented directly from the device or with dedicated cloud computing services (iModCloud)



NPE 9500 can perform 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
- SNMP Agent
- Web server with PHP and SQL database support
- SMS Gateway
- LTE/3G/GPRS router, NAT
- E-mail server, FTP, SSH, VPN

Features of adaptation 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, 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

LTE/3G/GPRS/EDGE modem*

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

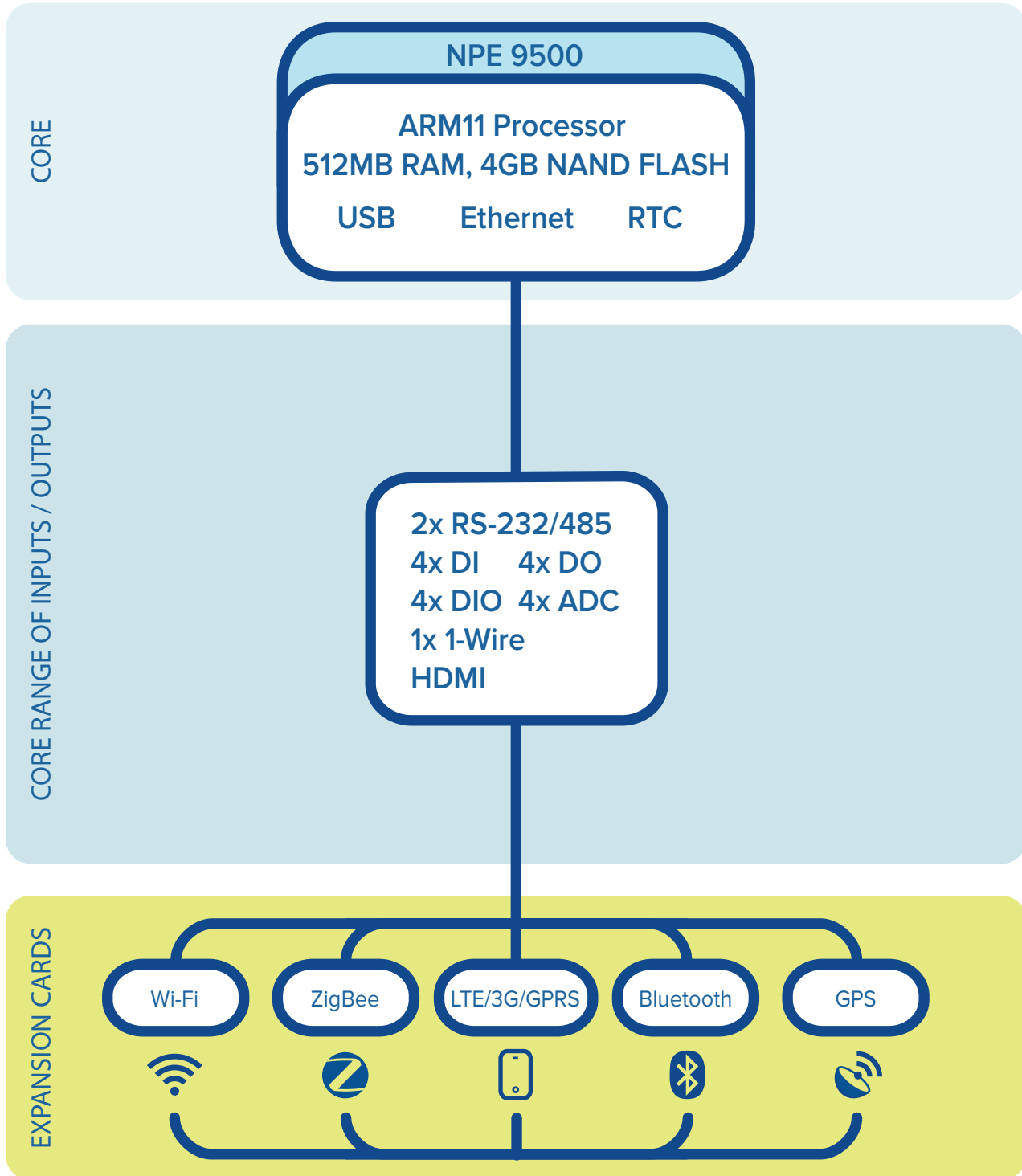
The device is equipped with Watchdog mechanism to ensure modem stability.

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 or iModCloud technology allows use of cards with non-public IP.

* GPRS/EDGE are supported by LTE/3G modem



iMod - an innovative software platform allowing for fast start-up and full exploitation of device capabilities without the need for writing programs. A fully configurable system reflecting typical C-L-V use (see clarification above). In order to learn more about the iMod platform, visit the page: www.techbase.eu/imod

iModCloud is a Software as a Service (SaaS) that fully controls iMod devices. Together stand as a complete solution ecosystem – **iModCloud Ecosystem**. In other words – it is a combination of a cloud service with a web user interface and special industrial devices that are fully manageable remotely.



READY-TO-USE

iModCloud is ready-to-use set of components that can be adjusted to any remote monitoring and control system



REMOTE CONTROL

User interface of the system is accessible from any place of the world through web browsers of desktops and mobile devices

PLC - software for creation of algorithms in the ladder system with the capability of operation on NPE, services the MODBUS protocol

Expanded developer's platform, additional software packs:

GPRS - facilitating management of the 3G/GPRS connection and containing the functionality of monitoring connection status and DynDNS service

SMS - allows sending and receiving text messages

APACHE - HTTP server pack, enabling device access from web browser

PYTHON/RUBY/JAVA/PHP - packs allowing creating, development and start-up of applications in many programming languages

PostgreSQL, MSSQL, SQLite - tools for database management

Open VPN - enables creating a connection, allowing communication between devices located in different networks, providing very high level of security

SSH - enables remote connection with device while maintaining high level of security

GPS - allows the location of the device, traffic monitoring for the unit and time synchronization

POWER FEEDERS



SDK-0302-12VDC-R

AC/DC power feeder, input 100-240V AC, output 12V DC 1000mA, cable endings in tube terminals



MDR-20-24

DIN bus power feeder, output 24V DC 24W, input 85..264 V AC or 120..370 V DC

ANTENNAS



ANT-GSM-1M

GSM antenna with frequency 824-960MHz/1710-1910MHz/1920-2170MHz

1-WIRE SENSORS



1Wire-Therm-Stainless

Digital temperature sensor in steel housing



1Wire-Therm-ABS

Digital temperature sensor closed in ABS plastic housing

M-BUS CONVERTERS



mBus 10

The mBus 10 is a transparent converter from RS-232 to M-Bus interface



mBus 400

The mBus 400 is a transparent converter from RS-232 to M-Bus interface. You can connect 4 RS-232 signal lines - RxD, TxD, CTS, RTS.

ZIGBEE SENSORS/MODULES



ZS-10, ZS-20

Multi-channel ZigBee Sensor with Battery Power Supply



ZM-10, ZM-20

ZigBee Relay I/O Module

INPUT/OUTPUT EXPANSION MODULES



NPEIO-6DIO

Digital inputs/outputs expansion module with MODBUS RTU support

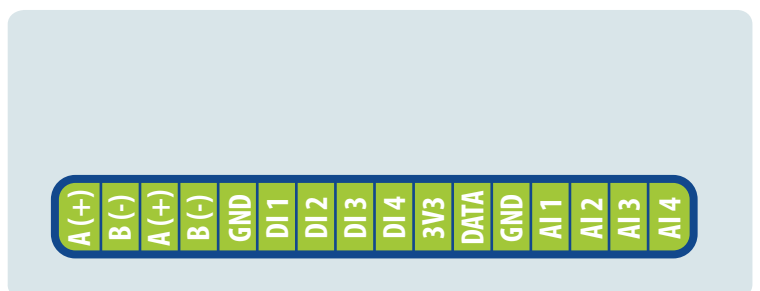
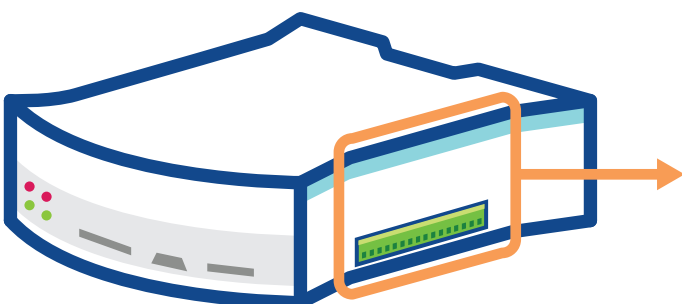


NPEIO-4RO

Relay outputs expansion module with MODBUS RTU support

NPE 9500

PINOUT



SYSTEM

CPU	ARM11 700 MHz
RAM	512MB
Flash Memory	4096MB
Operating system	Linux 3.19.3+
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

2x external USB 2.0 (host)

INPUTS / OUTPUTS

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

POWER SUPPLY

10 ~ 30 V DC, 1000 mA

MECHANICAL PARAMETERS

Dimensions	35 x 101 x 120 mm
Weight	300g
Casing	ABS, DIN rail mounting

OPERATING AND STORAGE CONDITIONS

-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 modem, GPS module
 ZigBee, Bluetooth

CONNECTORS AND PHYSICAL INTERFACES

1x RJ45 (Ethernet)
 1x miniHDMI
 2x monostable switch button
 1x16 pin screw terminal
 1x14 pin screw terminal
 1x2 pin power supply screw terminal
 2x USB 2.0 type A
 1x miniSIM card slot

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