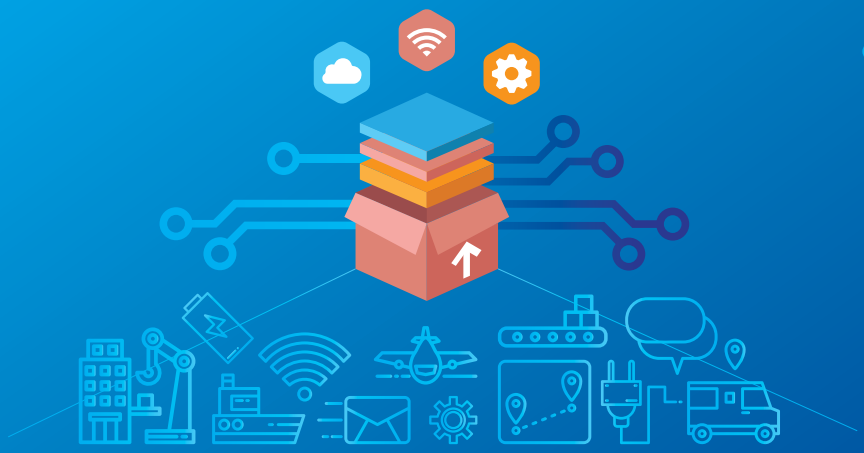
TECHBASE
WE MAKE CONNECTIONS. SIMPLE

iModGATE
eModGATE
ECOSYSTEM



Industrial IoT Ecosystem is a fully customizable and versatile solution for plug-and-play remote control of industrial installations. It is a combination of special industrial devices array that can be fully managed remotely.

iModGATE / eModGATE platform is a perfect solution for distributed type of data management network. Powerfull **iModGATE** serves as a gateway for all the data acquired from efficient system of **eModGATEs** connected to your sensors, meters and installation devices.

iModGATE
DATA GATEWAY

iModGATE can be connected with eModGATE devices via wired or wireless means of communication, to suit every installation needs. Wide range of industrial protocol support and low-cost management is a perfect solution for every data control project.

WIRED CONNECTION
ETHERNET, RS-232/485
USB, CAN, 1-WIRE

WIRELESS CONNECTION
WI-FI, BLUETOOTH
3G/LTE, NB-IOT
LORA, ZIGBEE

eModGATE
END-POINT GATEWAY

MODBUS, M-BUS
MQTT, SNMP

ENVIRONMENT SENSORS

PHYSICAL SENSORS

INDUSTRIAL PROTOCOLS

ENERGY METERS

00 Industrial IoT Structure

Complete solution for Industrial Automation

CLOUD COMPUTING LAYER

WEB SCADA, Big Data & other cloud data management solutions

SOFTWARE LAYER iMod/eMod

Data logging, device management, support for communication protocols, e.g. **Modbus RTU/TCP, M-Bus, MQTT, SNMP**, etc.

COMMUNICATION LAYER

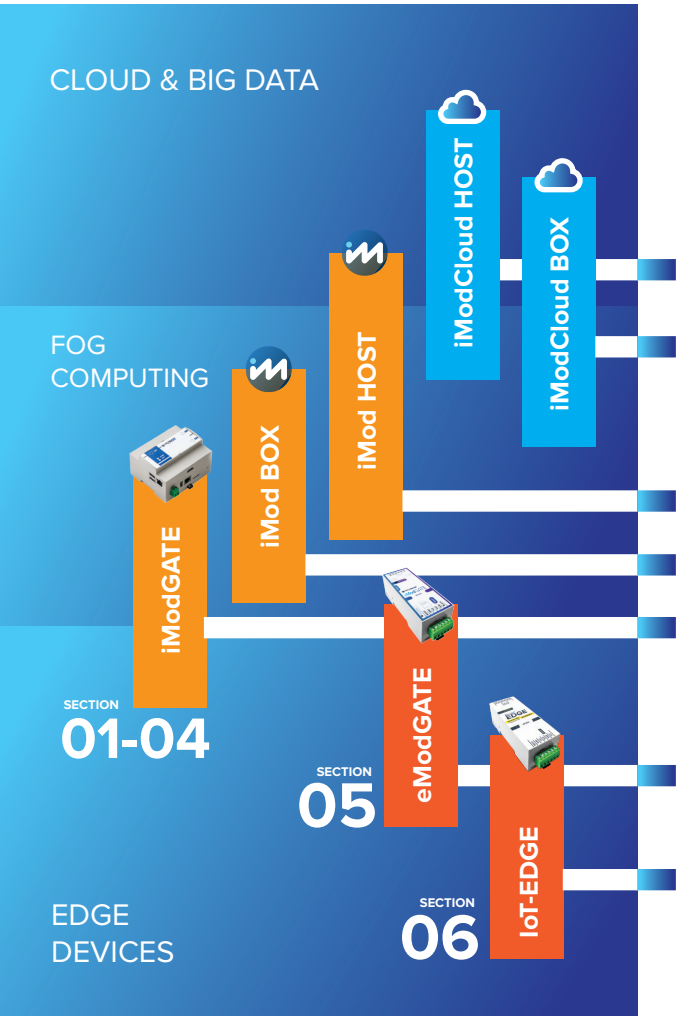
Wired or wireless VPN for internal communication

HARDWARE LAYER

IoT Gateway/Edge devices with wide range of physical interfaces, e.g. **RS-232/422/485, digital and analog I/Os, Relay, 1-Wire, CAN, Ethernet** and wireless interfaces, e.g. **Wi-Fi, Bluetooth, 3G/LTE, NarrowBand-IoT, LoRa, ZigBee**, etc.

SENSORS LAYER

Sensors and end-devices, depending on the type of project / system: power & water flow meters, temperature, humidity, ultrasonic sensors, etc.



Our products

iModCloud

iModCloud software-service, which enables full control of NPE/iMod devices. Together they form a stand-alone solution - **iModCloud Ecosystem**. In other words - it is a combination of cloud services with web-based user interface and industrial devices, fully manageable remotely.

iModCloud can be hosted externally, using stable DELL servers to host the cloud service. This solution is called i**ModCloudHOST**.

For higher data security or depending on project features, iModCloud can be hosted internally, inside the installation, using service called **iModCloudBOX**, hosted by the dedicated Mini-PC.

iMod

iModHOST - controls connected devices**,** logs data and provides management utilities for low-end devices from dedicated hosting level.

iModBOX - the alternative way to use **iMod** software is to install iMod externally on Mini-PC or hosting server, to improve the performance of the installation.

iModGATE - device with dedicated software for lower control devices of installation. iMod can be installed directly onto **industrial computer**, to ensure industrial protocol support and basic management tools.

eMod

eModGATE - a lightweight, but powerful energy-efficient and fully capable automation controller series – an industrial computer for remote data control and management, equipped with latest **ESP32** compute module, wide range of serial, digital and analog inputs/outputs and wireless communication interfaces.

IoT-EDGE - end-point data converter for wired and/or wireless interfaces. Cost effective solution is perfect for end-point data management of meters, sensors and data feeders.

01 iMod Platform

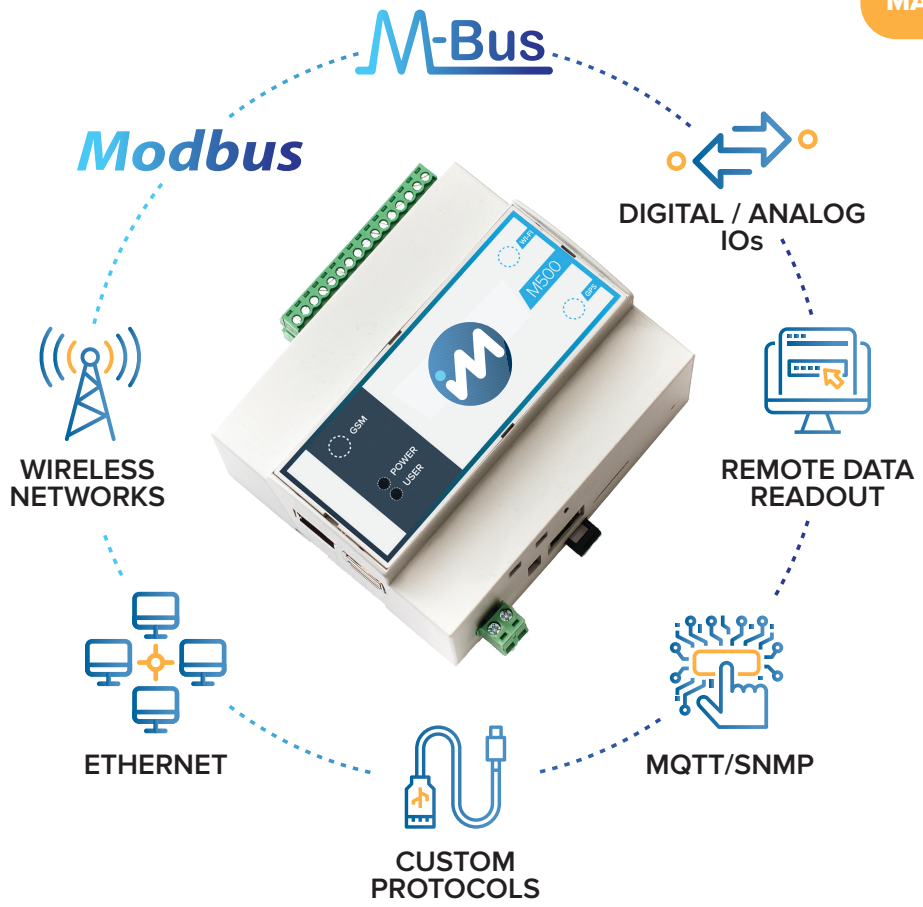
Software package for Industrial Computers

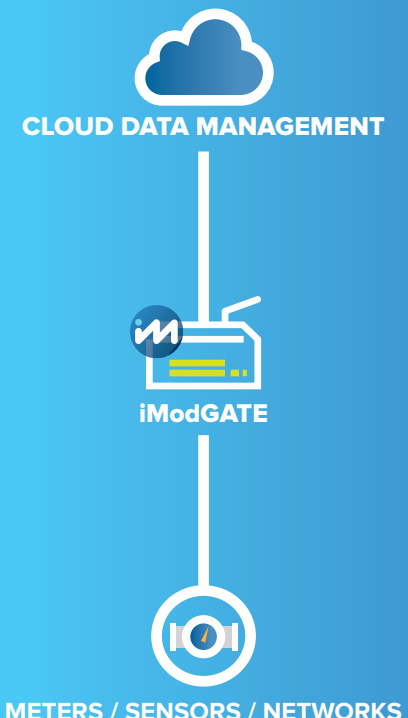
iMod

iMod platform presents an innovational approach to telemetry and industrial automation systems. iMod is a configurable device based on the efficient hardware controllers and system platform (Linux).

Thanks to universal architecture and plug-in solutions, it can work as an universal communication module in cooperation with any user protocols.

MAIN DATA GATEWAY





Ready Functionalities

One of the main advantages of the iMod platform is its ease of use and variety of available functionalities. Due to the available SDK, the platform can be extended with new, dedicated functionalities.

Convert

Functionality of a protocol and **interface converter (Convert)** collecting data from input interfaces (e.g. Ethernet or USB), converting and transferring to output interfaces, ZigBee, GPRS or to external modules. All the protocols supported by the iMod computer (M-Bus, Modbus, 1-Wire, TCP/IP, SNMP) can be used both as a source and target of conversion.

Visualize

Functionality of **access via Websites (Visualize)**. Graphic Visualization, via Web browser, in order to read and control processed data and alarm statuses - you can use a built-in Apache server and Web platform.

Quick Start

The iMod platform guarantees a quick start and full use of the NPE computer, without the need to write complicated software. It is a fully configurable system, that represents the typical C-L-V usage.

Log

Functionality of a **data logger (Log).** The iMod industrial computer can read data from connected devices at high speed. The data can be saved on the device (to internal eMMC or microSD card) or can be transferred asynchronously to external data bases (PostgreSQL or SQLite). All the archived data can be shared via external or internal systems (e.g. SCADA).

02

Platform comparison

Choose suitable solution for your project

ON-BOARD
OPTIONAL

	iModX500	iMod9500	iModM300	iModM500	iModM1000	iModM2000
Performance						
Price						
Battery Operation	UPS Ready	UPS Ready	UPS Ready	UPS Ready	—	—
Supported OS	Linux CODESYS	Linux CODESYS	Linux Android	Linux CODESYS Windows IoT	Windows 10 Linux Android	Windows 10 Windows IoT Linux, Android
INPUTS/OUTPUTS				*expandable with additional ExCard modules		
Digital I/Os	12 (up to 40)*	12 (up to 20)*	2 (up to 38)*	12 (up to 40)*	12 (up to 40)*	(up to 36)*
Analog Inputs	4 (up to 28)*	4	(up to 24)*	4 (up to 28)*	4 (up to 28)*	(up to 24)*
Analog Outputs	(up to 36)*	—	(up to 36)*	(up to 36)*	(up to 36)*	(up to 36)*
Relay Outputs	(up to 12)*	—	(up to 12)*	(up to 12)*	(up to 12)*	(up to 12)*
WIRED INTERFACES				*expandable with additional ExCard modules		
Serial Ports	2 (up to 10)*	2 (up to 3)*	2 (up to 14)*	2 (up to 14)*	2 (up to 13)*	(up to 12)*
Ethernet	1 (up to 3)*	1	1 (up to 3)*	2 incl. GbLAN (up to 3)*	2 incl. GbLAN (up to 3)*	2 incl. GbLAN
USB	1	2	1 / 2	up to 5 incl. USB 3.0	5 incl. USB 3.0	4 incl. USB 3.0
1-Wire						
CAN		—	—			—
mBus Master		—		—	—	—
HDMI			—			+DP 1.2
WIRELESS COMMUNICATION						
3G/LTE/GPS/NB-IoT						
WiFi / Bluetooth			/			
ZigBee/LoRa/WMBus						
HARDWARE RESOURCES						
Processor	Cortex-A53 4x 1.2GHz	Cortex-A53 4x 1.2GHz	up to Cortex-A53 4x 1.2GHz	Cortex-A72 4x 1.5GHz	Atom x5-Z8350 4x 1.44GHz	up to Intel N4200 4x 2.5GHz
RAM	1GB	1GB	512MB / 1GB	1/2/4GB	1/2/4GB	2/4/8GB
eMMC	up to 32GB	up to 32GB	—	—	16/32/64GB	16/32/64/128GB
Storage	USB Flash	USB Flash	microSD	microSD	USB Flash	SATA3/M.2

03 eModGATE Platform

Compact end-point Industrial IoT computer

eModGATE series

END-POINT GATE

ESP32-based eModGATE controller series, utilizing MicroPython environment to provide data management solutions for end-points applications. Sharing base components with EDGE converters and similar functionalities of iMod platform - eMod is a perfect solution for low-cost, low power consuming and remote installations. The eModGATE has built-in Wi-Fi/BT modem and can be equipped with additional serial ports, analog/digital/relay IOs, Ethernet, wireless modems, OLED display, battery power support, SuperCap support, IP65-67 & Aluminum cases.

- DUAL-CORE LX6 240MHz
- UP TO 8MB RAM 16MB eMMC
- BATTERY POWER SUPPORT
- SOFTWARE PACKAGE
- COMPACT & IOT-READY
- EXPANDABLE RESOURCES

BASE VERSION	X0 (NEW)	X1	X2	X3	X4 (NEW)
FEATURES					
Batterry power support	✓	✓ SuperCap only	✓ SuperCap only	✓ SuperCap only	✓ SuperCap only
Available extensions	1	1	3	2	2
DIN-Rail module/width	2M (36mm)	2M (36mm)	4M (71mm)	4M (71mm)	4M (71mm)
INPUTS/OUTPUTS					* available with ExCard
RS232/485	1 (up to 2)*	1 (up to 2)*	1 (up to 4)*	1 (up to 3)*	1/1 (up to 4)*
Digital/Analog Input	2 (up to 8)*	2 (up to 8)*	2 + 2xDI (up to 22)*	2 + 2xDIO or RO (up to 16)*	4xAI, 3xDI (up to 15)*
Digital Output	2 (up to 8)*	2 (up to 8)*	2 + 2xDO/AO (up to 22)*	2 + 2xDO/AO (up to 16)*	3 (up to 11)*
microUSB	—	—	✓	—	—

EDGE series

INDUSTRIAL IOT CONVERTER

EDGE is a lightweight, but powerful energy-efficient converter series – an industrial computer for remote data conversion and management, equipped with latest ESP32 compute module, wide range of IOs options: serial, digital and analog inputs/outputs and wireless communication interfaces. This cost effective solution is perfect for end-point devices.

INTERFACE #1		INTERFACE #2
RS232/485 M-BUS CAN ETHERNET	TRANSPARENT ⟷	WI-FI ETHERNET GPRS BLUETOOTH
IOs RS232/485	MODBUS MQTT ⟷	WI-FI ETHERNET GPRS