TECHBASE
WE MAKE CONNECTIONS. SIMPLE

IoT Ready Solutions for Industrial Automation

SEP 18

Meet **2018**'s complete offer
of TECHBASE Group Sp. z o.o.

TECHBASE

WE MAKE CONNECTIONS. SIMPLE

Our mission

Plug & Play

TECHBASE mission is to provide ready-to-use tools that make the process of implementing the system maximally shortened and simplified

Open technologies

Our solutions are based on modern Open Source standards and technologies, which are constantly expanding the capabilities of our products and systems

Flexibility

Our aim enables rapid configuration of all system components thanks to flexible parameters adjustment to the changing requirements through the scalability of our solutions

Three pillars of our company

IoT Ecosystem

Our primary product is ready-to-use solution for industrial automation. iModCloud IoT Ecosystem contains all the necessary components for remote management installations, monitoring parameters and visualization.

For more information visit:
iot.a2s.pl

Devices production

We are a manufacturer of industrial computers, converters, and wireless sensors. Our devices are used in solutions for industrial automation, telemetry and remote management installations.

For more information visit:
www.techbase.eu

Devices distribution

We distribute equipment in the field of industrial automation solutions from leading manufacturers. We run A2S.PL automation catalog, where you can find equipment for wireless communications, industrial computers, converters, controllers and software.

For more information visit:
iiot-shop.com

What is Industrial IoT 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 cloud services with web interface and special industrial devices that can be fully managed remotely.

Where can I use it?

Monitoring and control

Manage remotely the installations and monitor industrial processes

Telemetry

Use the full capabilities of telemetry modules.
Control, monitor, visualize and register the data remotely.

Smart Grid

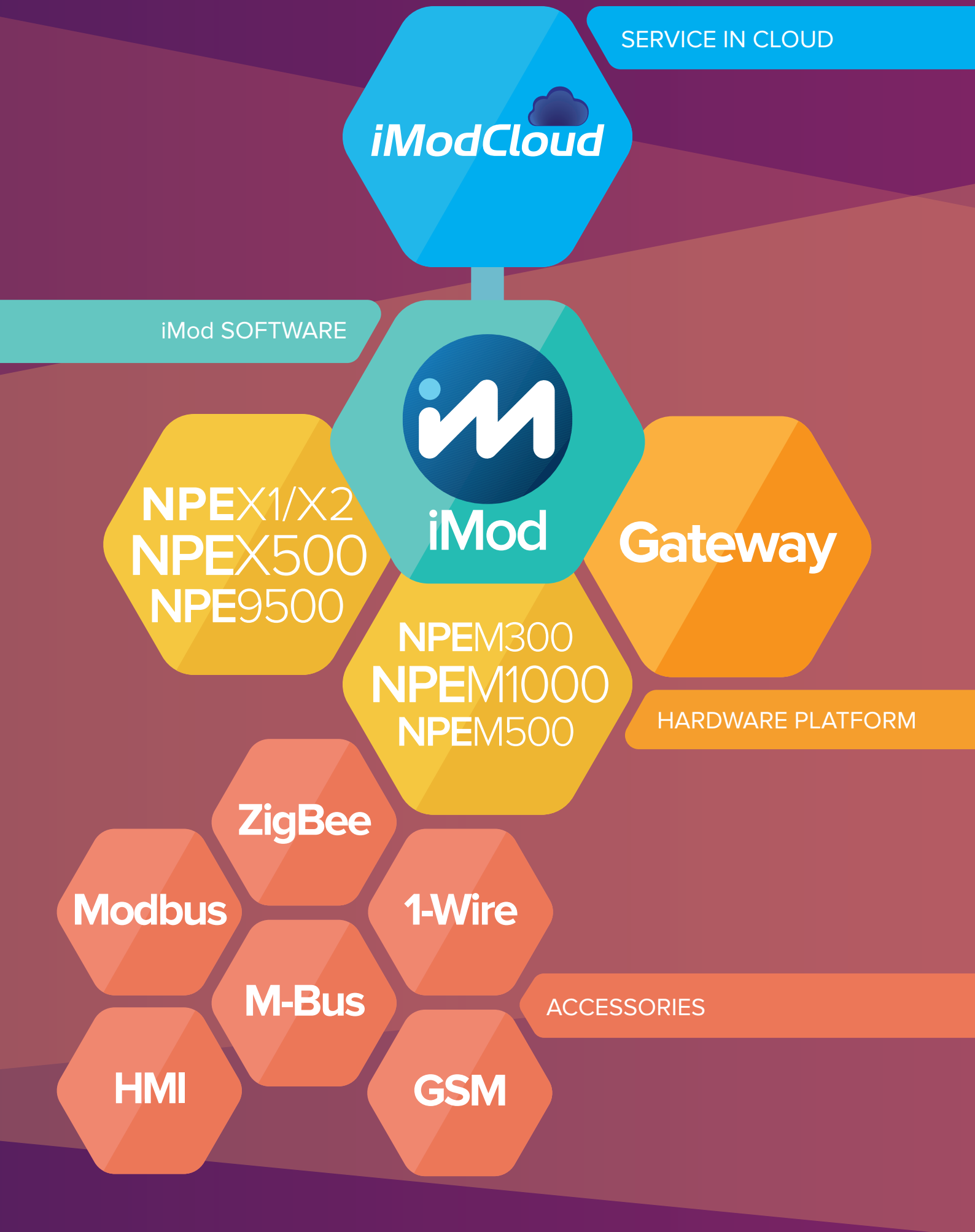
Smart Grid enters the next level with iModCloud service

Smart Metering

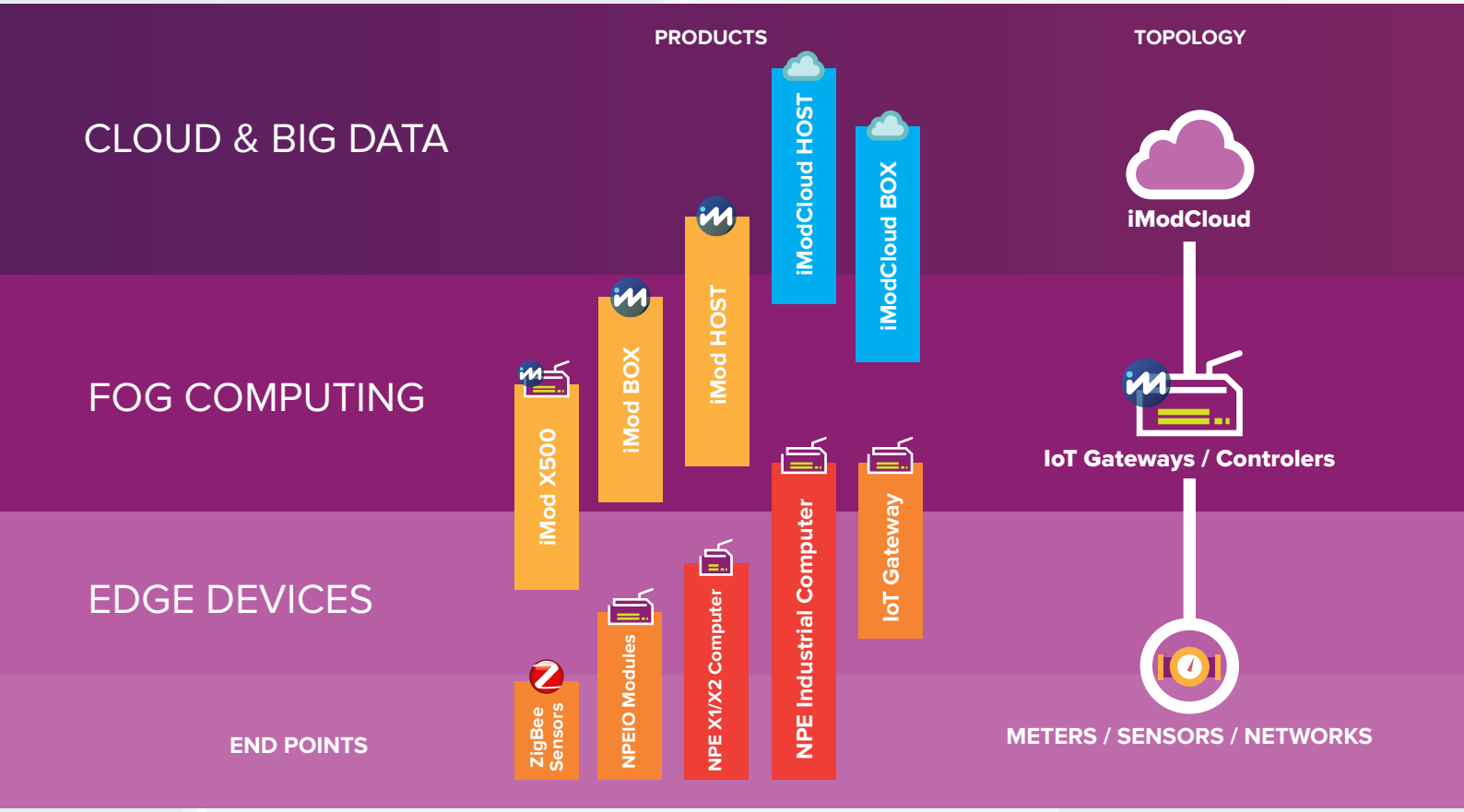
Smart Metering is more efficient and effective in connection with the iModCloud service

For more information visit: **www.iot.a2s.pl**

iModCloud IoT Ecosystem components

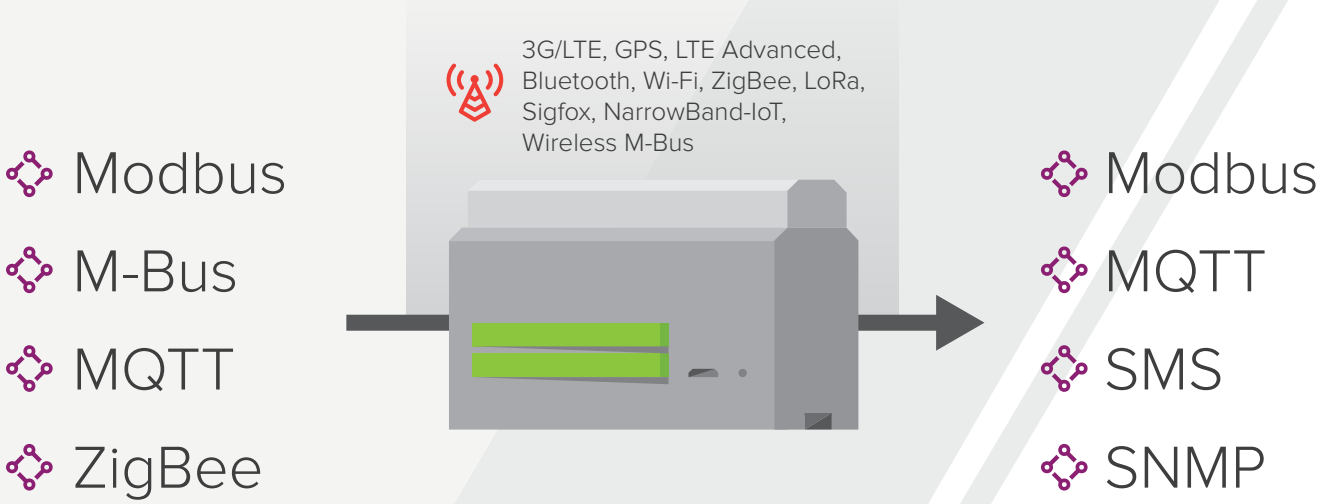


iModCloud IoT Ecosystem layers



IoT Gateways

IoT Gateways are designed for easy integration of M-Bus, Modbus RTU and TCP/MQTT/SNMP networks. Modbus serial slave devices can be seamlessly added into an existing Modbus TCP network, and Modbus TCP slaves can be made accessible to serial masters. IoT Gateways also support ZigBee communication.








NEW PROCESSOR MODULE 3 | NEW | NEW

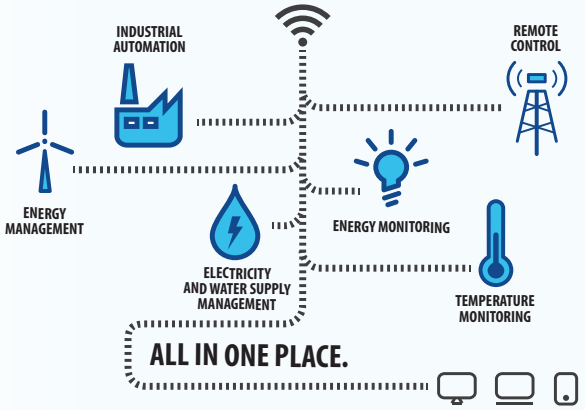
ON-BOARD
OPTIONAL

	NPEX500	NPE9500	NPEM300	NPEM500	NPEM1000	NPEM2000	NPEX1/X2
Performance	●●●○	●●●○	●●○○	●●●○	●●●●	●●●●	●○○○
Price	$$○○	$$○○	$○○○	$$○○	$$$○	$$$○	$○○○
Battery Operation	UPS Ready	UPS Ready	UPS Ready	UPS Ready	–	–	24/7 continuous operation
Supported OS	Linux CODESYS	Linux CODESYS	Linux Android	Linux CODESYS Windows IoT	Windows 10 Linux Android	Windows 10 Windows IoT Linux, Android	MicroPython Arduino ESP-IDF, etc.
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)*	4-8 (up to 68)*
Analog Inputs	4 (up to 28)*	4	✓ (up to 24)*	4 (up to 28)*	4 (up to 28)*	✓ (up to 24)*	2-4 (up to 64)*
Analog Outputs	✓ (up to 36)*	–	✓ (up to 36)*	✓ (up to 36)*	✓ (up to 36)*	✓ (up to 36)*	0-2 (up to 62)*
Relay Outputs	✓ (up to 12)*	–	✓ (up to 12)*	✓ (up to 12)*	✓ (up to 12)*	✓ (up to 12)*	✓ (up to 20)*
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)*	1-2 (up to 22)*
Ethernet	1 (up to 3)*	1	1 (up to 3)*	2 (up to 4)*	2 incl. GbLAN (up to 3)*	2 incl. GbLAN	✓
USB	1	2	1	3	5 incl. USB 3.0	4 incl. USB 3.0	–
1-Wire	●	✓	●	●	●	✓	✓
CAN	✓	–	–	✓	✓	–	–
mBus Master	✓	–	✓	–	–	–	✓
HDMI	✓	✓	–	●	●	● +DP 1.2	–
WIRELESS COMMUNICATION							
GPRS/3G/LTE/GPS	✓	✓	✓	✓	✓	✓	✓
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-A53 4x 1.2GHz	Atom x5-Z8350 4x 1.44GHz	up to Intel N4200 4x 2.5GHz	Tensilica LX6 2x 240 MHz
RAM	1GB	1GB	up to 1GB	1GB	1/2/4GB	2/4/8GB	4MB
FLASH	4GB	4GB	–	–	16/32/64GB	16/32/64/128GB	4MB
STORAGE	USB Flash	USB Flash	microSD	microSD	USB Flash	SATA3/M.2	microSD

iModCloud

MANAGE, CONFIGURE, SHARE IN ONE PLACE

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.



For more information visit: **www.imodcloud.com**

REMOTE CONTROL

User interface is **accessible from anywhere in the world** via a web browser on PC or mobile devices

READY SOLUTION

iModCloud is a set of ready-to-use components, with the possibility of adapting them to each system of **remote monitoring and control**

FULL CONTROL

Our solution allows you to remotely manage the complete production process. With the help of a web browser, you can eg. **check the parameters** of individual devices and sensors (rev/min., temperature, liquid level), **control devices and relays**, **collect data** and present them graphically.

With iModCloud you have easy access to all devices within the structure of the installation, control their processes, check status, register data and create visualization through a **web browser on any device**.

iModCloud is available in two options:

iModCloudBOX X200

iModCloudHOST

INTERNET OF THINGS

Internet of Things (IoT) is defined as a concept by which certain objects can communicate with each other via network exchanging, processing and gathering data. One of the pioneers in the Polish, as well as the global market in the field of IoT is a TECHBASE company, which in its solution **iModCloud Ecosystem** combines the benefits of IoT and Cloud Computing.

For more information about IoT visit: **www.blog.techbase.eu**

iMod

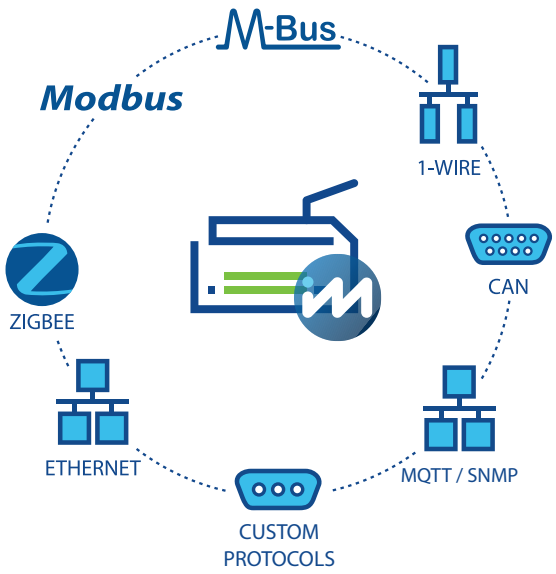
iMod presents an innovational approach to telemetry and automation systems. iMod is a configurable device based on the efficient NPE hardware and system platform (Linux). Thanks to universal architecture and plug-in solutions, it can work as an universal communication module in cooperation with any user protocols.

TELEMETRY

Telemetry is a technology that allows transferring measurement data over distance. Such a method of data acquisition from devices enables control of all processes from one place. Supervision of processes via a control panel increases the overall system operation effectiveness.

The use of remote data readout function is especially important in many sectors of industry, such as: energy, gas, water and sewage engineering, where implementation of new methods of parameter readout enables optimization of entire distribution process and the way of working.

The iMod software enables remote data readout from many distributed devices and sending the data to a control panel located at any distance, using wired (cables, optical fibres, etc.) and wireless (GPRS, Wi-Fi, ZigBee, etc.) communications.



Accessories

ZigBee/LoRa

ZigBee/Lora wireless modules and sensors designed for remote control of relays, digital and analog inputs, as well as for remote reading of temperature and humidity.

M-Bus

EASY CONTROL OF METERS

iMod has a built-in scan function of connected M-Bus meters and built-in data registration function.

MBus device, depending on the model, allows you to connect up to 10, 60, 200 or 400 slave receivers (M-Bus side).

Modbus

With the iMod device all Modbus configurations (Master, Slave, TCP, RTU, Modbus Gateway), as well as communication event "modbus push" are available.

MQTT/SNMP

PERFECT SOLUTION

NPE/iMod devices support wide range of industrial protocols, e.g. MQTT/SNMP and many more to serve almost every project requirements

NB-IoT/LTE/3G/GPRS

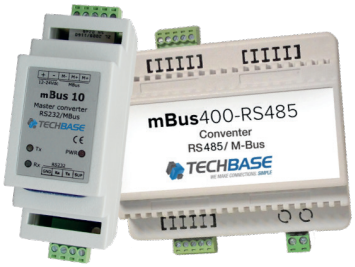
NPE/iMod industrial computer with built-in NB-IoT/LTE/3G/GPRS modem can function as a notifier module. For example, can alert on exceeding the temperature and humidity. It also works with industrial GSM/WiFi/GPS routers of other manufacturers.

Touch Panels

TECHPANEL P500 is the newest Industrial IoT Computer, equiped with 7”/10”/15” Touchscreen Display and high performance Raspberry Pi Compute Module3. IoT ready industrial computer, fully programmable for Industry 4.0 installations. P500 gives users the ability to create all-in-one solutions such as tablets, infotainment systems and embedded projects.

ACCESSORIES

mBus 10 - 400



Baud rate	300 ~ 192000 bps
RS-232	TxD, RxD, GND, RTS, CTS
M-Bus Master	M1, M2
Maximum number of devices	up to 400 (M-Bus Slave)
Surge protection	43V, 600W/ms
Galvanic isolation	100V AC/DC
Power supply	20 ~ 35V DC
Work temperature	0 ~ 60 °C
Dimensions	105 x 90,5 x 60,2 mm (W x D x H)

We have **mBus 10, mBus 60, mBus 200** and **mBus 400** converters in our offer, supporting up to **10, 60, 200, 400** M-Bus Slave devices.

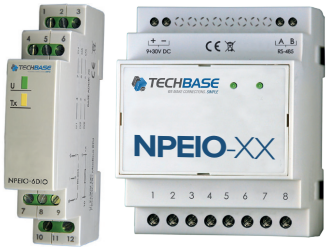
ZigBee ZS-10

Digital input	2x DI (0 - 3 V)
Analog input	1x AI 0-20 mA (0 - 3 V) (resolution 12 bit)
Meter input	1x DI (0 - 3 V), max. frequency: 800 kHz
Temperature measuring range	from - 40^0 C to +150^0 C
Operating frequency	2,4 GHz
Wireless protocol	Compatible withIEEE 802.15.4, ZigBee 2007/PRO
Speed of wireless transmission	250 kbit/s
Transmission range	to 300m (in open space)
Power supply	2x AA battery
Dimensions	64 x 83 x 28mm (W x D x H)

We have **ZS-10, ZS-20, ZM-10** and **ZM-20** ZigBee modules in our offer. Below you will find a comparison of different models.

	ZS-10	ZS-20	ZM-10	ZM-20
Meter inputs	1	1	1	1
Analog inputs	1	3	3	3
Digital inputs	2	6	2	6
Digital outputs	-	1	1	4
Relay outputs	-	-	2	2
Built-in temperature sensor	1	1	1	1
Power supply	battery	battery	ext. DC	ext. DC

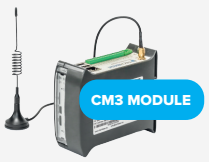
NPEIO-XX



We offer modules extending the range of input devices via RS-485 according to the MODBUS RTU protocol. The following abbreviated specification of devices.

NPEIO-4AI	4 analog inputs
NPEIO-4AO	4 analog outputs
NPEIO-4RO	4 relay outputs
NPEIO-RO	1 relay output
NPEIO-6DIO	6 universal digital inputs/outputs
NPEIO-4DI-(HI-LOW)	4 digital inputs high (HI) or low (LOW) voltage

More information about NPEIO can be found at: **http://www.a2s.pl/npeio-s.html**

	EDGE POINT	IoT GATEWAYS					PERFORMANCE	
	 ESP32 MODULE	 CM3 MODULE	 CM3 MODULE			 WINDOWS 10 IoT	 WINDOWS 10	 WINDOWS 10
	NPEX1/X2	**NPE**X500	**NPE**9500	**NPE**M300N	**NPE**M300P	**NPE**M500	**NPE**M1000	**NPE**M2000
CPU	Tensilica LX6 2x240 MHz	Cortex-A53 4x1.2 GHz	Cortex-A53 4x1.2 GHz	**Cortex-A7** / Cortex-A53 4x1.2 GHz	Cortex-A53 4x1.2GHz	Cortex-A53 1.2 GHz	Intel Atom x5-Z8350 4x1.92 GHz	**Intel N3350 2x2.4GHz** / N4200 4x2.5GHz
RAM	4 MB	1 GB	1 GB	**512 MB** / 1 GB	1 GB	1 GB	**1** / 2 / 4 GB	**2** / 4 / 8 GB
Flash memory	4 MB SPI	4 GB eMMC	4 GB eMMC	microSDHC	8 GB eMMC	microSDHC	**16** / 32 / 64 GB eMMc	**16** / 32 / 64 / 128 GB eMMc
Additional storage	1x microSDHC (optional)	USB flash drive	USB flash drive	USB flash drive	1x microSDHC	USB flash drive	USB flash drive	SATA3 port, M.2 slot PCIe Gen.2
OS/Software support	MicroPython, Arduino, ESP-IDF, Zephyr Project, Mongoose OS	Linux, Codesys	Linux, Codesys	Linux, Android	Linux, Android	Linux, Codesys, Windows IoT	Windows10, Linux, Android	Windows10, Windows IoT, Linux, Android
RTC	**RTC**, RTC with battery (optional)	RTC, SRAM 240 bytes	RTC, SRAM 240 bytes	RTC, SRAM 240 bytes	RTC, SRAM 240 bytes	RTC, SRAM 240 bytes	RTC, SRAM 240 bytes	RTC
Ethernet interface	ExCard only	1x 10/100 Mbps + ExCard	1x 10/100 Mbps	**1x 10/100**/1000 (N2) Mbps + ExCard	1x 10/100/1000 Mbps + ExCard	2x 10/100 Mbps + ExCard	1x 10/100Mbps, 1x 1Gb + ExCard	2x 10/100/1000 Mbps + ExCard
RS-232 / RS-485 ports	1x RS-232 or 485 + ExCard	2x RS-232 /485 + ExCard	2x RS-232/485 + ExCard	1x RS-232 + ExCard 1x RS-485 + ExCard	1x RS-232 + ExCard 1x RS-485 + ExCard	2x RS-232/485 + ExCard	1x RS-232 + ExCard	ExCard only
USB ports	-	1x USB 2.0	2x USB 2.0	1x USB 2.0	2x USB 2.0	3x USB 2.0	5x USB 2.0 1x microUSB 3.0 OTG	3x USB 3.0 1x microUSB 3.0 OTG
Digital inputs (DI) (0..30V DC)	**X1: 2x DI/AI** / X2: 2x DI/AI, 2x DI	4x DI + ExCard	4x DI	ExCard only	ExCard only	4x DI + ExCard	4x DI + ExCard	ExCard only
Digital outputs (DO) (0..30V DC)	**X1: 2x DO** / X2: 2x DO, 2x DO/AO	4x DO + ExCard	4x DO	ExCard only	ExCard only	4x DO+ ExCard	4x DO + ExCard	ExCard only
Configurable Digital I/O	ExCard only	4x DI/DO + ExCard	4x DI/DO + ExCard	2x DI/DO + ExCard	2x DI/DO + ExCard	ExCard only	4x DI/DO (optional)	ExCard only
Relay outputs (RO)	ExCard only	ExCard only	-	ExCard only	ExCard only	ExCard only	ExCard only	ExCard only
Analog inputs (AI)	**X1: 2x AI (12-bit) / 2x DI** X2: 2x AI (12-bit) / 2x DI + ExCard	4x AI - 0..10V DC (18-bit) (optional) + ExCard	4x AI - 0..10V DC (18-bit) (optional)	ExCard only	ExCard only	4x AI - 0..10V DC (18-bit) (optional) + ExCard	ExCard only	ExCard only
Analog outputs (AO)	X2: 2x AO/DO +ExCard (up to 16-bit)	ExCard only	ExCard only	ExCard only	ExCard only	ExCard only	ExCard only	ExCard only
1-Wire	1x 1-Wire (optional)	1x 1-Wire	1x 1-Wire (optional)	1x 1-Wire (optional)	1x 1-Wire (optional)	1x 1-Wire	1x 1-Wire	ExCard only
CAN	1x CAN (optional)	1x CAN (optional)	-	-	-	1x CAN (optional)	1x CAN (optional)	-
HDMI	-	1x HDMI (optional)	1x HDMI (optional)	-	-	1x HDMI	1x HDMI	**1x HDMI 1.4b, 1x DisplayPort 1.2**, eDP
Audio	-	HDMI (only) (optional)	HDMI (only) (optional)	-	-	HDMI / jack 3.5mm	HDMI (only)	HDMI (only)
Available Wireless Modules								
• Wi-Fi / Bluetooth	✓/✓ *built-in	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓
• LTE / 3G / GPRS / GPS	✓/✓/—/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/—/✓	✓/✓/—/✓	✓/✓/—/✓	✓/✓/—/✓	✓/✓/—/✓
• NB-IoT/cat. M1	✓	✓	✓	✓	✓	✓	✓	✓
• ZigBee / LoRa / WMBus	✓/✓/✓	✓/✓/✓	✓/✓/✓	—/✓/✓	—/✓/✓	✓/✓/✓	✓/✓/✓	✓/✓/✓
Available Extension Cards								
• Ethernet	✓	✓	—	✓	✓	✓	✓	✓
• RS-232/485, RO, AI, AO, DI, DO + optoisolation (optional)	✓ up to 5 exp. cards	✓ up to 3 exp. cards	ADC/AO/5VDC 1RS/1-wire/4DIO	✓ up to 3 exp. cards	✓ up to 3 exp. cards	✓ up to 3 exp. cards	✓ up to 3 exp. cards	✓ up to 3 exp. cards
• Accelerometer / mBus Master	✓/✓	✓/✓	—/—	✓/✓	✓/✓	✓/✓	✓/✓	✓/✓
Power supply	6~30 VDC, typ. 0.3~1.5W UPS backup (optional)	9~30VDC, typ. 7~25W UPS backup (optional)	9~30VDC, typ. 7~25W UPS backup (optional)	9~30VDC, typ. 7~25W UPS backup (optional)	9~30VDC, typ. 7~25W UPS backup (optional)	9~30VDC, typ. 7~25W UPS backup (optional)	9~30VDC, typ. 12~30W UPS backup (optional)	5V or 9~30VDC, typ. 12~30W UPS backup (optional)
Dimensions	90 x 36 x 32 mm	91 x 106 x 61 mm	45 x 101 x 120 mm	91 x 106 x 61 mm	91 x 106 x 61 mm	91 x 106 x 61 mm	91 x 106 x 61 mm	91 x 106 x 61 mm
Weight	150g (w/o extension modules)	300g (w/o extension modules)	300g (w/o extension modules)	250g (w/o extension modules)	250g (w/o extension modules)	350g (w/o extension modules)	350g (w/o extension modules)	350g (w/o extension modules)
Casing	ABS, DIN rail mount	ABS, DIN rail mount	ABS, DIN rail mount	ABS, DIN rail mount	ABS, DIN rail mount	ABS, DIN rail mount	ABS, DIN rail mount	ABS, DIN rail mount
Operating conditions	0 ~ 55°C, 5 ~ 95% RH Extended temp. range (optional): -40 ~ 70°C, 5 ~ 95% RH	0 ~ 55°C, 5 ~ 95% RH Extended temp. range (optional): -25 ~ 65°C, 5 ~ 95% RH Special request (optional): -40 ~ 70°C, 5 ~ 95% RH	0 ~ 55°C, 5 ~ 95% RH Extended temp. range (optional): -25 ~ 65°C, 5 ~ 95% RH	0 ~ 55°C, 5 ~ 95% RH Extended temp. range (optional): -30 ~ 65°C, 5 ~ 95% RH	0 ~ 55°C, 5 ~ 95% RH Extended temp. range (optional): -30 ~ 65°C, 5 ~ 95% RH	0 ~ 55°C, 5 ~ 95% RH Extended temp. range (optional): 0 ~ 65°C, 5 ~ 95% RH	0 ~ 55°C, 10 ~ 80% RH	0 ~ 55°C, 10 ~ 80% RH

Specifications is subject to change without notice. Some of the features are optional.
Technical parameters should be confirmed in the order details.

For more information visit: **iiot-shop.com**

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