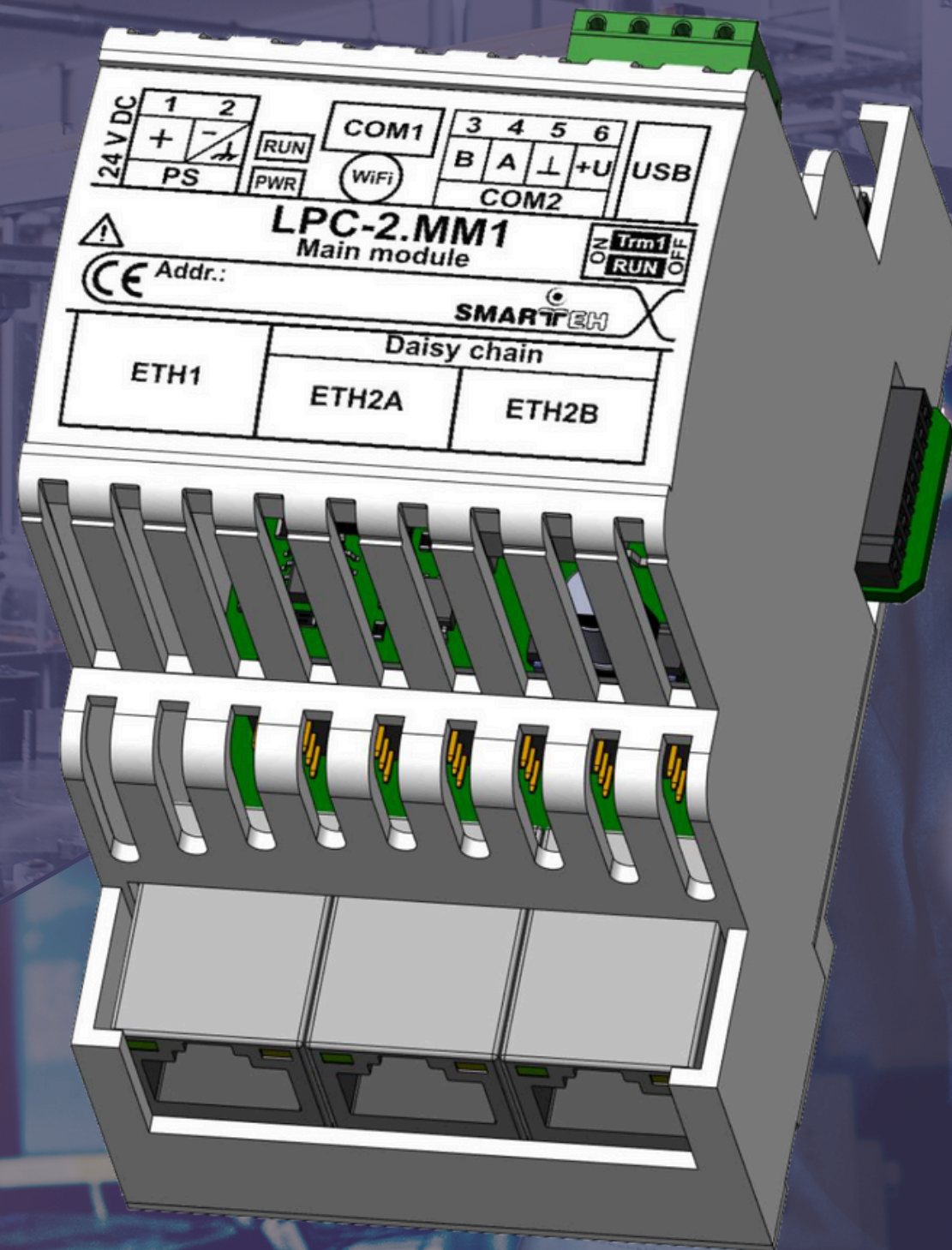# LPC-2.MM1

PLC main control module

WWW.SMARTEH.COM

USER MANUAL

LINKEDIN

YOUTUBE

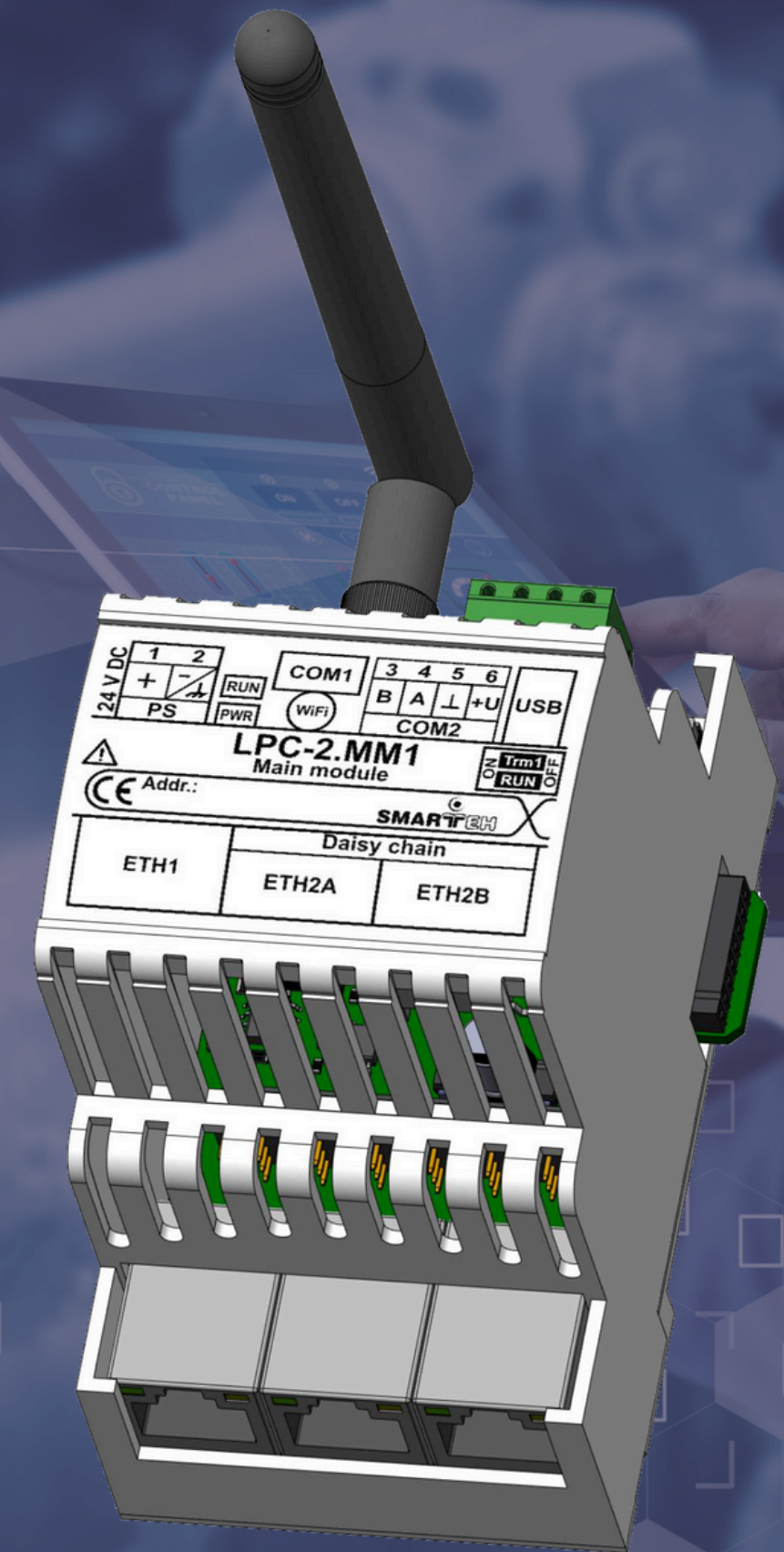SALES@SMARTEH.SI

+386 5 388 4400

INTRODUCTION

Discover the revolutionary Smarteh LPC-2.MM1 PLC main control module that sets a new standard for performance, scalability, and versatility in building and industrial automation.

The LPC-2.MM1 features a compact, Arm-based System on Module (SoM) package, delivering enhanced computing power and control with a wide array of advanced features. Powered by an ARM architecture processor and a Linux-based OS, the LPC-2.MM1 is future-proof, enabling seamless interface connections and core SoM module upgrades without hardware changes. Effortlessly expand your capabilities by connecting additional input and output modules via an internal bus connector on the right side of the LPC-2.MM1.

Unleash seamless connectivity with Ethernet Daisy chain topology.

Experience the next evolution in networking with Ethernet Daisy Chain Topology—a revolutionary solution designed to simplify and streamline your network infrastructure like never before.

The LPC-2.MM1 is a connectivity powerhouse, featuring two Ethernet Daisy chain ports with fail-safe functionality through an integrated switch for uninterrupted operation during power failures. Additionally, LPC-2.MM1 has a fast Gigabit Ethernet port for independent networking with BMS, third-party PLCs, cloud, or other data acquisition and control systems.

The WiFi antenna is not included in the scope of supply.

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KEY FEATURES & BENEFITS

➢ **Unmatched automation performance in a compact Arm-based SoM**

The LPC-2.MM1 PLC-based main control module is powered by an advanced i.MX6 Single (ARM® Cortex™ - A9) @ 1GHz CPU ensuring robust performance for a variety of automation tasks. With its high processing speed and efficiency, this SoM handles complex computations and real-time processing with ease.

➢ **Discover Inkscape: A professional and open-source vector GUI editor**

Experience the ultimate design freedom with Inkscape, the versatile open-source vector GUI editor that empowers you to create stunning graphical interfaces. Seamlessly integrated with Smarteh IDE, this powerful platform offers limitless possibilities and unmatched flexibility for UI design and PLC functionality. Say goodbye to costly licenses and fees, and embrace a world where your creativity knows no bounds.

➢ **Connect remotely to a PLC in the field via a web browser**

Access the LPC-2.MM1 PLC from any device through a web browser, utilizing a secure VPN connection or simplified Broadcast transmission.
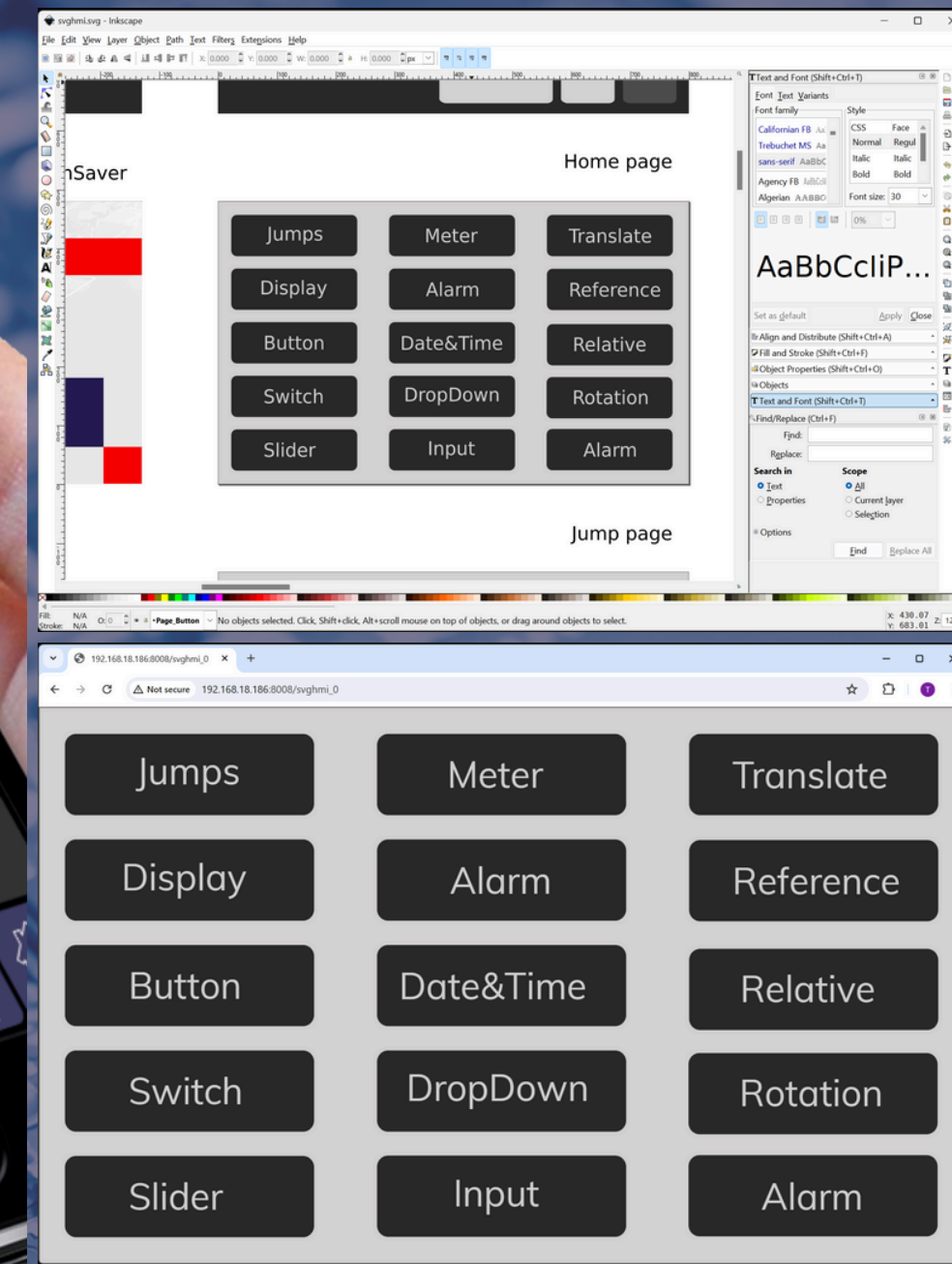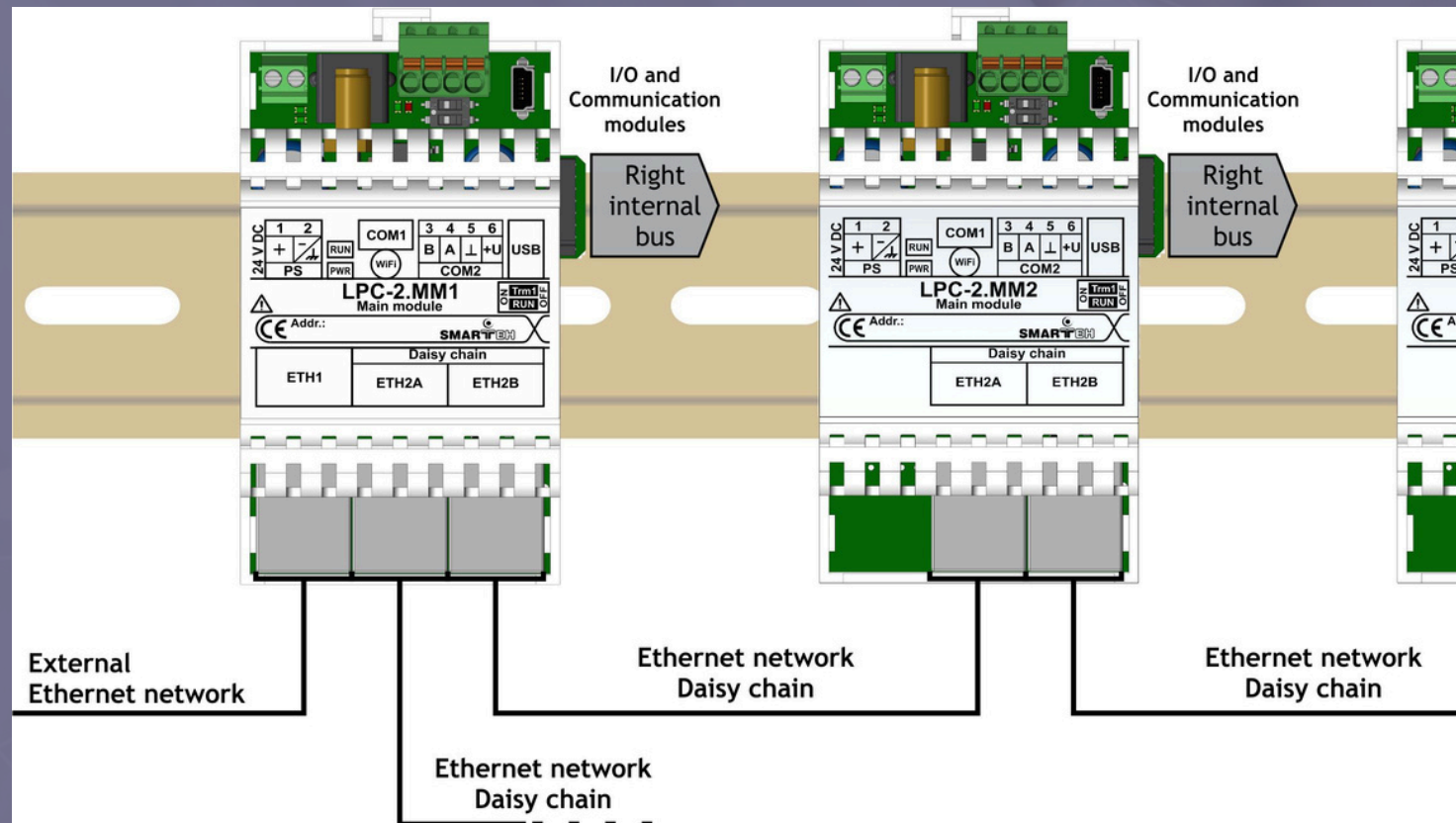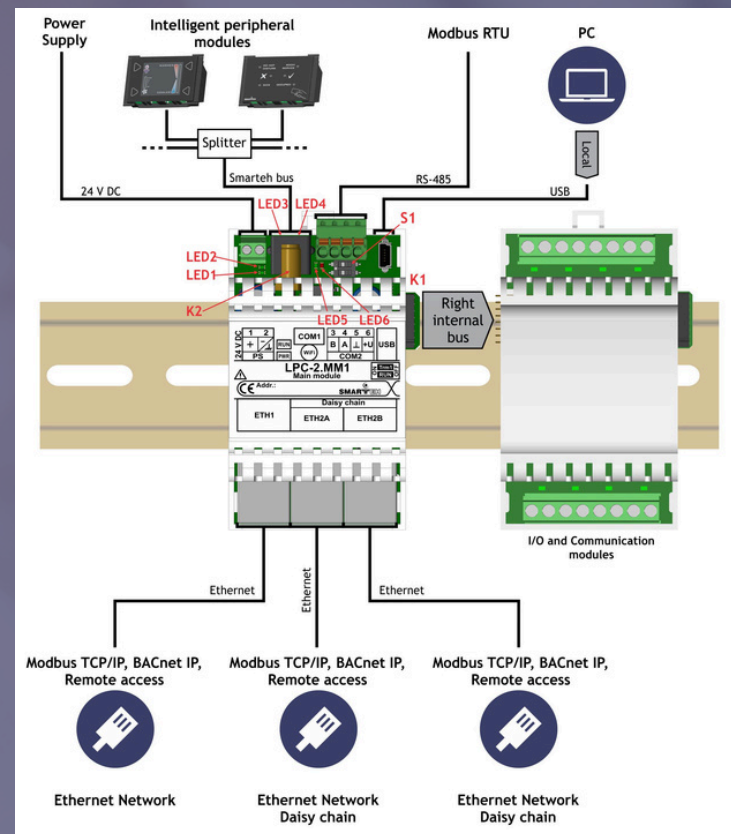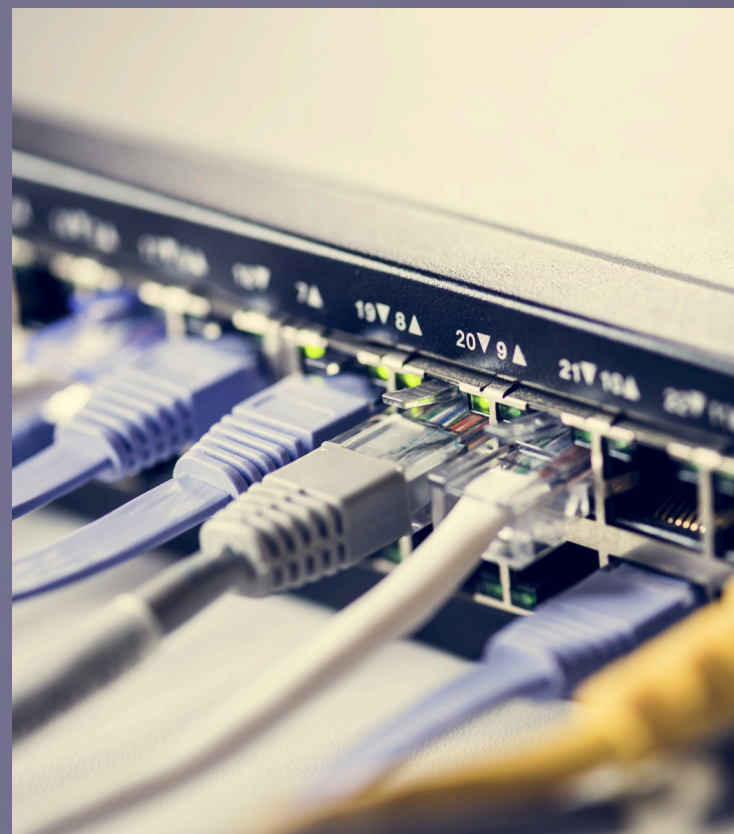
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KEY FEATURES & BENEFITS

➢ Efficient and scalable connectivity

Ethernet daisy chain enables seamless communication between devices, minimizing latency, ensuring consistent signal strength, and allowing for easy network expansion, thus optimizing overall system performance and scalability. Designed with scalability in mind, the LPC-2.MM1 allows for easy expansion and integration as system requirements grow.

Ideal for both small-scale projects and large industrial applications, providing flexibility and future-proofing your investment.

➢ Versatile connectivity

LPC-2.MM1 supports a wide range of connectivity options, including Ethernet connectivity with Modbus TCP/IP Slave (server) and/or Master (client) functionality, BACnet IP (B-ASC), web client with SSL support, Modbus RTU Master or Slave facilitating seamless integration into existing networks.

➢ Compact and robust design

The single compact LPC-2.MM1 main control module minimizes space requirements, making it perfect for applications with limited space. Built to withstand harsh industrial environments, ensuring reliable performance in challenging conditions.

KEY APPLICATIONS

➢ **Building automation**

Ideal for smart building solutions, HVAC systems, lighting control, and energy management. Enhances building efficiency, comfort, and security through intelligent automation.

➢ **Industrial automation**

Perfect for manufacturing, process control, and industrial IoT applications. Optimizes production processes, reduces downtime, and improves overall productivity.

➢ **Smart infrastructure**

Suitable for smart city projects, including traffic management, smart grids, and public safety systems. Supports real-time data analysis and decision-making, enhancing urban living standards.

GENERAL

1 CPU
i.MX6 Single (ARM® Cortex™-A9) @ 1GHz

2 RAM
1 GB DDR3

3 NV RAM
512 kB, capacitor backed up with retention cca. 14 days

4 FLASH
4 GB eMMC 8bits (MLC type)

5 OPERATING SYSTEM
Linux

COMM. PORTS

1 — ETHERNET
1x RJ-45, 10/100/1000T IEEE 802.3
2x RJ-45, 10/100T IEEE 802.3

2 — WIFI
IEEE 802.11 b/g/n, SMA female connector

3 — UART PORT
1x Smarteh bus RJ-12 6/4 non isolated
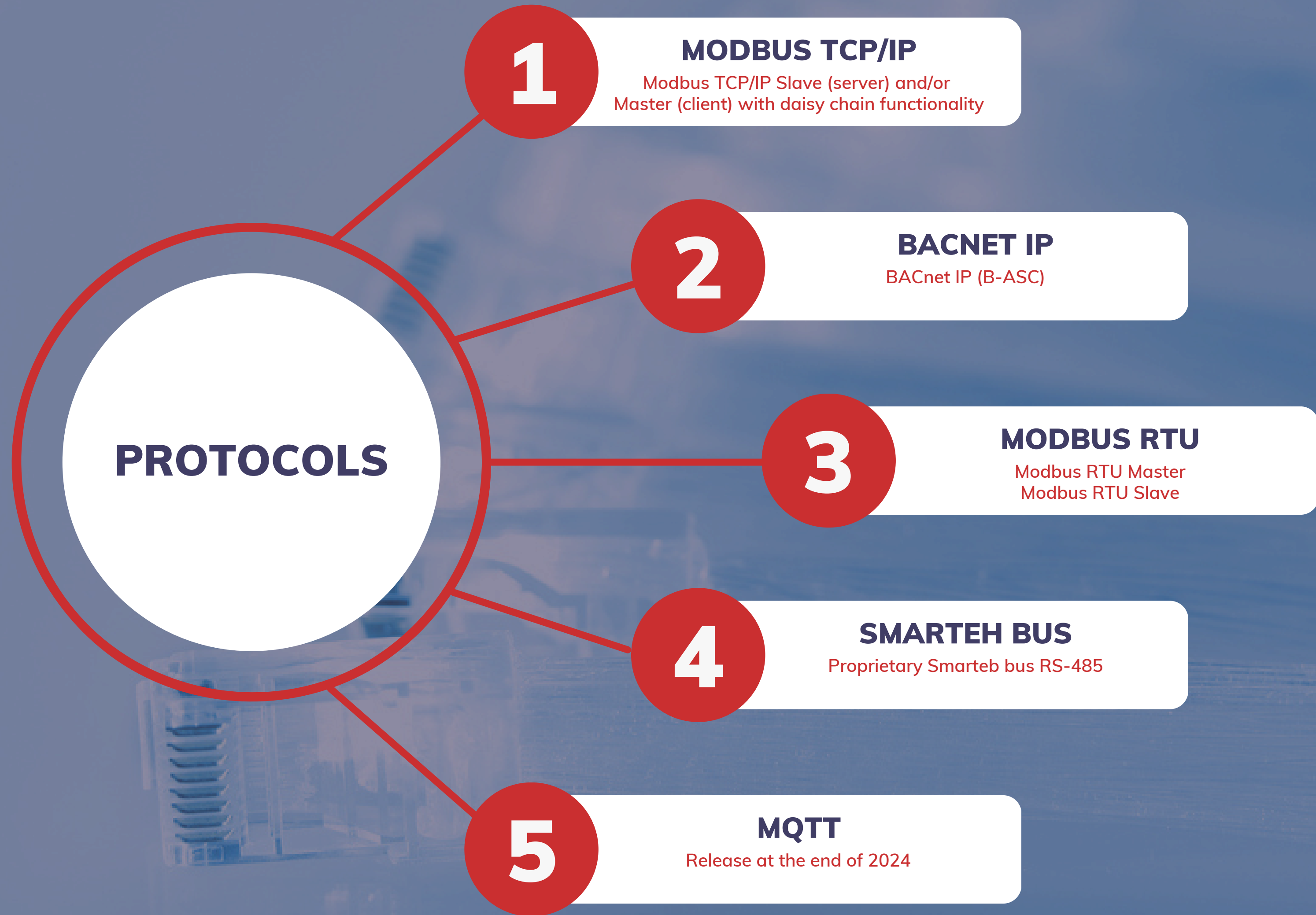1x Modbus RTU RS-485 non isolated, 2 wire

4 — USB HOST
1x mini B type, device mode or host mode
(USB On-TheGo), high-speed/full-speed

5 — RIGHT INTERNAL BUS
For connection to Smarteh I/O and
Communication modules

PROTOCOLS

1 MODBUS TCP/IP
Modbus TCP/IP Slave (server) and/or Master (client) with daisy chain functionality

2 BACNET IP
BACnet IP (B-ASC)

3 MODBUS RTU
Modbus RTU Master
Modbus RTU Slave

4 SMARTEH BUS
Proprietary Smarteb bus RS-485

5 MQTT
Release at the end of 2024

SPECIFICATIONS

1 POWER CONSUMPTION
Up to 24 W depending on additional modules connected to main module

2 POWER SUPPLY
Rated 24 V DC, 2A
Operational 20 .. 28 V DC

3 TEMPERATURE
Operating 0° ~ 50°C (32° ~ 122°F)
Ambient -20° ~ 60°C (-4° ~ 140°F)

4 MOUNT
DIN EN50022-35 rail mounting

5 ENCLOSURE
Nilit Nilamid B G6 FR C4 30% Glass Fiber Reinforced, Flame Retardant PA6 + MB7035

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