APIS Mod

## Communication module for manufacturers of Intelligent Electronic Devices

The APIS Mod is a module dedicated to producers of energy equipment. By using this hardware, manufacturers can quickly and effectively extend the functionality of the device with communication compliant with the IEC 61850, DNP3, or IEC 60870-5-104 standards.

KEY FEATURES

• Seamlessly integrates IEDs with any communication standard.
• Available with PRP support.
• Designed to easily add new protocols.
• Reduces time to market for IED products.

CONFIGURATION OF THE APIS MOD

The dedicated engineering application Drosera simplifies the configuration of the APIS Mod and protocols mapping. The tool is designed to be user-friendly and does not require any programming knowledge from the user.
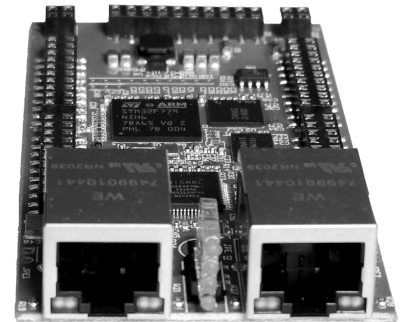
It is also possible to implement an individual configuration method depending on the requirements of the device manufacturer.

PARALLEL REDUNDANCY PROTOCOL SUPPORT

The APIS Mod is suitable to be used in the power grid and industrial applications where high availability is expected. Consequently, it is also offered with Parallel Redundancy Protocol (PRP) support in accordance with the requirements of IEC 62439-3. The version supporting PRP sends duplicated frames through both Ethernet ports to two independent local networks. The PRP implementation is protocol-independent and can be used with IEC 61850, DNP3, and IEC 60870-5-104.

FIRMWARE

The APIS Mod facilitates one-to-one conversion between two protocols chosen by the customer. The firmware can be customized at the customer's request.
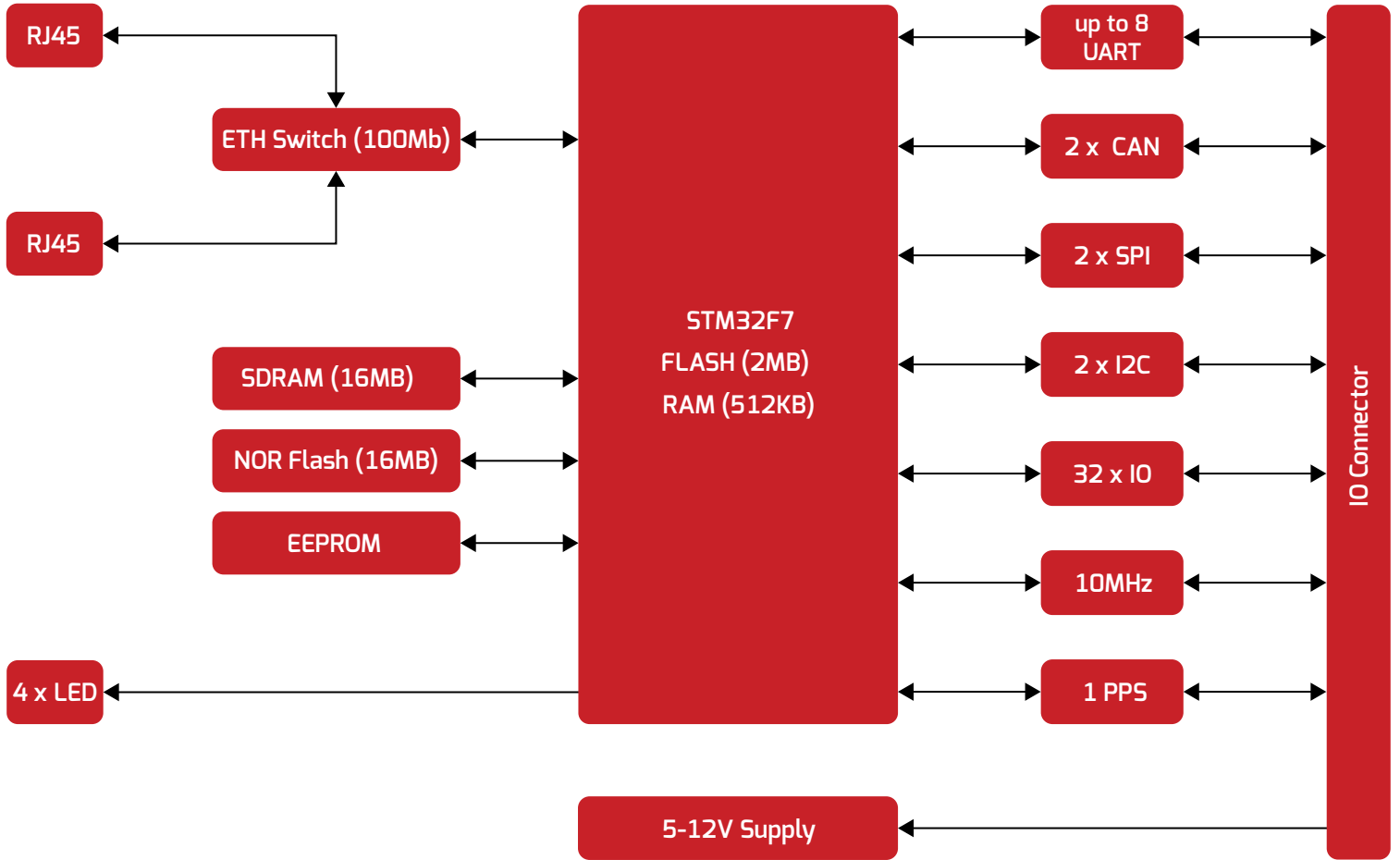
CYBERSECURITY

As cybersecurity becomes increasingly important, especially in the context of critical infrastructure, APIS Mod can be supplied with TLS encryption capabilities and authentication using digital certificates.

JPEMBEDDED
Embedding ideas

sales@jpembedded.eu   •   +48 601088970   •   ul. Strumienna 12, 30-609 Kraków, POLAND   •   www.jpembedded.eu

SYSTEM ARCHITECTURE

```
RJ45 ←→ ETH Switch (100Mb) ←→ STM32F7 FLASH (2MB) RAM (512KB)
RJ45 ←→ ETH Switch (100Mb)

SDRAM (16MB) ←→ STM32F7
NOR Flash (16MB) ←→ STM32F7
EEPROM ←→ STM32F7

4 x LED ←

STM32F7 ←→ up to 8 UART ←→ IO Connector
STM32F7 ←→ 2 x CAN ←→ IO Connector
STM32F7 ←→ 2 x SPI ←→ IO Connector
STM32F7 ←→ 2 x I2C ←→ IO Connector
STM32F7 ←→ 32 x IO ←→ IO Connector
STM32F7 ←→ 10MHz ←→ IO Connector
STM32F7 ←→ 1 PPS ←→ IO Connector

5-12V Supply ← IO Connector
```

PROTOCOLS

IEC 61850 DNP3 MQTT	Modbus TCP Modbus RTU	IEC 60870-5-103 IEC 60870-5-104 proprietary protocols

TECHNICAL SPECIFICATION

System		Inputs and outputs	Mechanical	
CPU	STM32F7, 216MHz	ETH (100Mb)x2	**Installation**	on client device
Memory	16MB SDRAM 16MB Nor Flash 2MB Nand Flash	UARTx8 CANx2 SPIx2	**Dimentions**	49x18x96 mm
		I2Cx2	**Power Supply**	
OS	FreeRTOS	SD USB AB	12V - 50V DC	
LED	4 configurable LEDs	GPIOx32 1 PPS signal 10 MHz signal	**Environmental** **Operating Temp.** -20÷60℃ **Storage Temp.** -30÷80℃	