

# SMART GRID COMMUNICATION ENABLERS

## SOFTWARE LIBRARIES

JPEmbedded's off-the-shelf communication software libraries for IEDs offer platform independent architecture, which fosters porting and reduces the time to market. All software products are highly configurable in terms of the enabled functionality, resources used, and maintain a very low memory footprint. A simplified, royalty-free licensing model and source code access are the primary reasons why our solutions are the first choice for embedded applications.

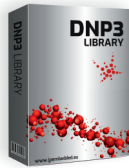
When requested by the customer we offer integration of our software libraries on the target devices.



IEC 61850



ICCP/TASE.2



DNP3



IEC 60870-5-101



IEC 60870-5-103



IEC 60870-5-104

	IEC 61850	ICCP/TASE.2	DNP3	IEC 60870-5-101	IEC 60870-5-103	IEC 60870-5-104
Server	yes	yes	yes	yes	yes	yes
Client	yes	yes	yes	yes	yes	
Cybersecurity IEC 62351	yes	yes	yes			
Implementation	C++	C++	C++	C++	C++	C++
Available API	C++ / C / Rust	C++ / C / node JS	C++ / C	C++ / C	C++ / C	C++ / C
Features	MMS Server Reporting Control Model GOOSE R-GOOSE SMV R-SMV Substitution Setting groups	CBB1 CBB2 CBB3 CBB4 CBB5 CBB7 CBB8 CBB9	static data points (class 0) events (class 1,2,3) interoperability level 3			
Standard version	IEC 61850:2010 (ed.2)	IEC 60870-6-503- 2014 IEC 60870-6-503- 2002	DNP3 (IEEE 1815- 2012)	IEC 60870-5- 101:2003	IEC 60870-5- 103:1997	IEC 60870-5- 104:2006

## Request a free evaluation!

To request a FREE EVALUATION version of any of our libraries, please send an e-mail containing information about the target platform microcontroller and operating system.

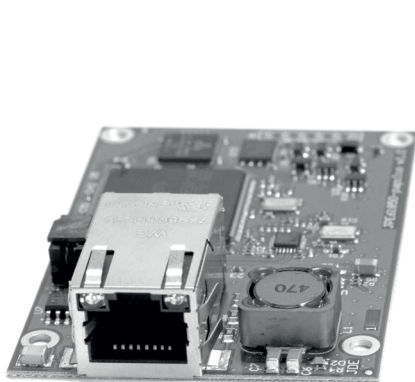


JPEMBEDDED  
Embedding Ideas

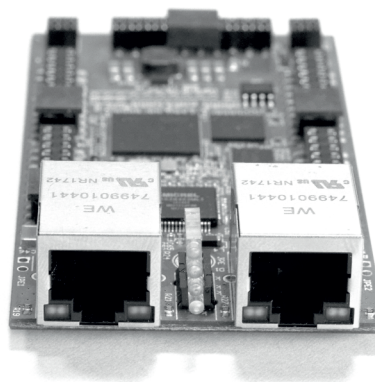
## HARDWARE PROTOCOL CONVERTERS

When the integration of an external software communication library is not an option for the customer, hardware modules might be the fastest way of plugging the IED deployed in the field into e.g. IEC 61850 network.

Our offering includes a range of protocol converters. They could be used as standalone devices with housing, mounted on din rail or a PCB integrated within customer product. Depending on the module type, feature set, and quantities the price of a single module could start at 99 EUR.



**PAPILIO**



**APIS**

MCU	STM32F7 (216MHz)	STM32F7 (216MHz)
Memory	8MB SDRAM 2MB Flash 4KB EEPROM	16MB SDRAM 16MB Flash 4KB EEPROM
Operating System	FreeRTOS	FreeRTOS
Ethernet ports	1	2
I/O ports	UART x1	UART x2 CAN x2 SPI x2 I2C x2 SDIO USB GPIO x32 1 PPS
Protocol conversion (Any to any)	IEC 61850 DNP3 MQTT ModbusRTU ModbusTCP IEC 60870-5-103	IEC 61850 DNP3 MQTT ModbusRTU ModbusTCP IEC60870-5-103 Custom protocols
Redundancy	no	PRP
User App	Drosera App	

For more informations, licensing details, price quotation requests, please contact JPEmbedded:  
**[sales@jpembedded.eu](mailto:sales@jpembedded.eu)**  
**+48 601 088 970.**