

port industrial automation GmbH

Software stack and SoM for the development of CC-Link IE TSN products

An engineering company that specialises in industrial real-time data communication has developed two alternatives for CC-Link IE TSN products: a software stack (master/slave) reduces in-house development time and costs for the component manufacturer while an embedded system on module (SoM) can directly expand existing platforms.

Founded in 1990, port industrial automation GmbH based in Halle/Saale is committed to industrial real-time communication in all sectors. More than 500 product and system developers worldwide use MCU middleware, libraries, cores, protocol stacks, drivers, tools and development services from port to successfully place their products on the market.

Since the beginning of CANopen, the company has primarily relied on multi-protocol solutions, working in collaboration with market drivers from the European and US automation industries. Today, port focuses on the Industrial Ethernet protocols in their many forms and that is why, in June 2018, it joined the CC-Link Partner Association (CLPA) in order to support its latest Industrial Ethernet technology CC-Link IE TSN which combines gigabit bandwidth and Time-Sensitive Networking (TSN).

“port mainly serves industrial markets such as factory automation, logistics automation, sensor technology and the process industry and our real-time communication solutions cover the whole communication chain. CC-Link IE TSN provides an interesting technology platform which enables data from sensor to interface ‘IT’ to be displayed safely and represents an important addition to our portfolio”, says Dietmar R. Franke, CEO/CFO of port industrial automation. “We will continue to develop the company by focussing on TSN as we will fully support the whole topic of ‘Time-Sensitive Networking’ with a variety of products.”

The product range for CC-Link IE TSN currently includes a software stack that contains the tools required to configure, manage and install the new open specification. A decisive advantage of the stack solution is its hardware independence. The stack is ported to the relevant hardware platform in a consistent format and already contains the TSN features that are supported according to IEEE standards. In addition, there are appropriate configuration and management tools.

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Moreover, port has developed a hardware product for CC-Link IE TSN in the form of an embedded system on module (SoM) which can be used as an add-on or expansion board for existing systems. “In other words, customers who are currently using a platform that offers a serial peripheral interface (SPI) can also add CC-Link IE TSN to their platform via this interface”, says Franke.

While the licensing of port’s CC-Link IE TSN stack is aimed at customers who will then be able to optimise their development effort for larger quantities, the company also wants the embedded module to offer a CC-Link IE TSN option for companies which produce very small quantities. Franke sees opportunities for the SoM alternative for mechanical engineering in particular: “This fully integrated SoM alternative is particularly suitable for manufacturers who make more specific products such as certain gateways or I/Os with small annual production runs because all the customer has to take care of is the integration of the hardware. However we also offer that as a service for the CC-Link IE TSN system.”

Photo caption: port has developed a hardware product for CC-Link IE TSN in the form of an embedded system on module (SoM) which can be used as an add-on or expansion board for existing systems.

Keywords: CLPA, CC-Link Partner Association, port, CC-Link IE TSN, Time-Sensitive Networking, software stack, SoM, embedded system on modules, embedded module, gigabit bandwidth, real-time data communication, TSN,

Links: CC-Link IE (Master and Slave Stack) <https://www.port.de/en/products/cc-linkie-tsn-master-slave.html>

System on Module (SoM) <https://www.system-on-module.com/>

Note: This technical contribution was created together with the CLPA. <https://eu.cc-link.org/en/>