ESS OFFERS

SOC-E & RELYUM SOLUTIONS IN AEROSPACE & DEFENCE NETWORKING

| Deterministic Ethernet	High Availability Ethernet	Time Aware Ethernet

The long-term supply, flexibility and integration capabilities of the modern FPGAs and Reconfigurable Platforms have set these devices as the preferred technology for the new embedded devices in Aerospace and Defence market. In the same way, Ethernet technology combined with the use of IEEE 1588 standard for sub-microsecond timing synchronization has simplified the integration and the interoperability among these systems.

SoC-e along with Relyum, is a pioneer developing a complete portfolio of IP and end products for Ethernet networking and synchronization. Among other solutions, SoC-e offers to the Aerospace and defence sectors on SOM boards, End equipment's and reconfigurable Devices.

SMARTMPSOC BRICK MODULES

SoCe has developed rugged System-on-Modules (SoMs) and carriers, which can be used for the development & pilot stages and even for the direct integration into the equipment. The portfolio of these modules includes FPGA only, Zynq and Zynq Ultrascale+ MPSoC boards.

- SATA-3 disk interface connector.
- 2 GB DDR4 RAM memory with 64 MB Quad SPI Flash Memory with 16GB eMCC Flash memory
- 5x Ethernet Phys 10/100/1000BaseT-X, 3x PS-GTR Transceivers
- Support additional high-speed connectivity channels like SGMII
- Battery for Real Time Clock (RTC), security ICs (TPM, gyro, etc.) and SATA-3 disk interface connector.
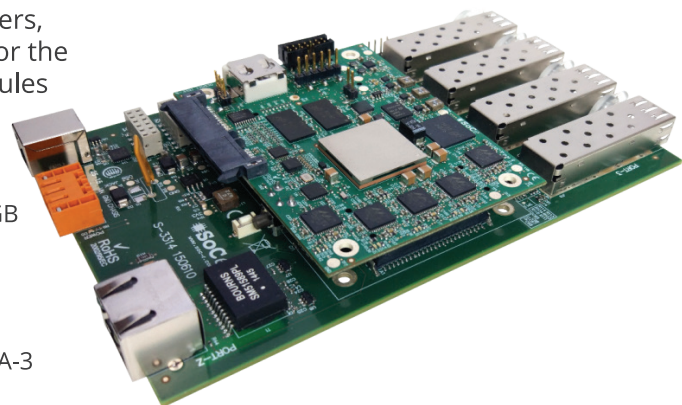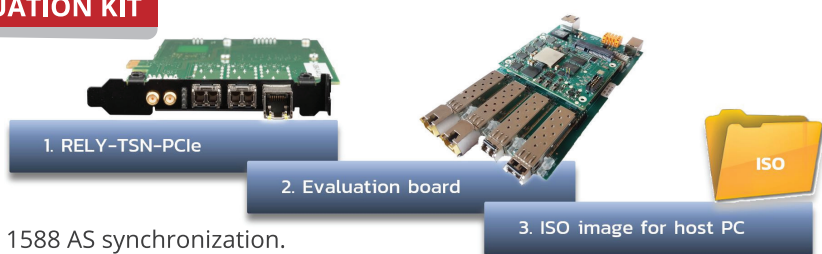
Learn More: www.soc-e.com/smartmpsoc-brick-hsr-prp-ptp-gbe-full-out-of-the-box-networking-solution

## RELY-TSN-KIT: TIME-SENSITIVE NETWORKING EVALUATION KIT

In order to allow an effective approach to TSN for system integrators, RELYUM has launched the first TSN kit based on end products that allows to evaluate:

1. RELY-TSN-PCIe
2. Evaluation board
3. ISO image for host PC
ISO

• The importance of a common sense of time based on IEEE 1588 AS synchronization.
• The deterministic delivery of real-time traffic thanks to the Time Aware Shaper.
• The benefit of bandwidth distribution and reservation between traffic classes through a Credit Based Shaper

Learn More: www.relyum.com/web/rely-tsn-kit

MTSN KIT : A COMPREHENSIVE MULTIPORT TSN SETUP

SMARTmpsoc Brick 1
SMARTmpsoc Brick 2
GbE TSN
Computer
Ethernet
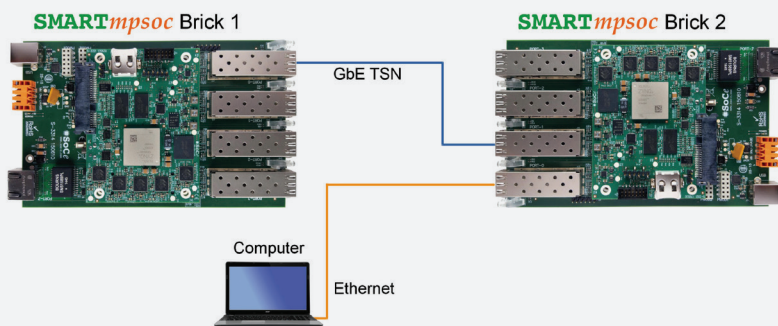
Multiport Time Sensitive Networking (MTSN) is SoC-e solution for any customer that requires an all-in-one solution to introduce Time Sensitive Networking in their equipment

MTSN can be implemented optimally depending on the application. It can be configured to generate from a simple 2-ports TSN adaptor to a complex multiport switch. The designer can select, among other parameters, the number of ports and memory distribution for the switch implemented in the FPGA section. This entire configuration is done graphically using Xilinx Vivado Tool

Learn More: www.soc-e.com/mtsn-kit-a-comprehensive-multiport-tsn-setup

HSR/PRP/PTP NETWORKING CARD

SMARTzynq PCIe HSR/PRP/PTP is a networking card compliant with HSR and PRP v3 Redundant Ethernet protocols (IEC 62439 clause 5 and 4). These protocols ensure high availability for the networking on critical infrastructures offering zero-delay recovering time and no frame lost in case of a network failure. The board attaches the Industrial PC to the redundant network, and additionally, it supports RedBox mode of operation for external regular Ethernet equipment through a third port

Learn More: www.soc-e.com/smartzynq-pcie-hsrprpptp-2

RELY-REC: TIME AWARE NETWORK RECORDER

Relyum has launched RELY-REC, a highly specialized analysis tool for seamless capture of Ethernet traffic, with the possibility to register the timestamp for all the stored messages. This stand-alone device embeds all the logic for monitoring, filtering, times tamping and capturing the traffic of the most complex Ethernet networks in a low-consumption compact format.

• Ability to **View** live traffic transmitted in the network and Filter traffic on the fly.
• Ability to **Collect** real-time data, time stamped according to the vehicle synchronization plane (IEEE 802.1AS, for instance)
• Ability to **Trigger** data capture action based on multiple configurable user-defined event
• Ability to **Save** data to an internal data logger and later transfer to the PC for post-analysis tasks

Learn More: www.relyum.com/web/rely-rec

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