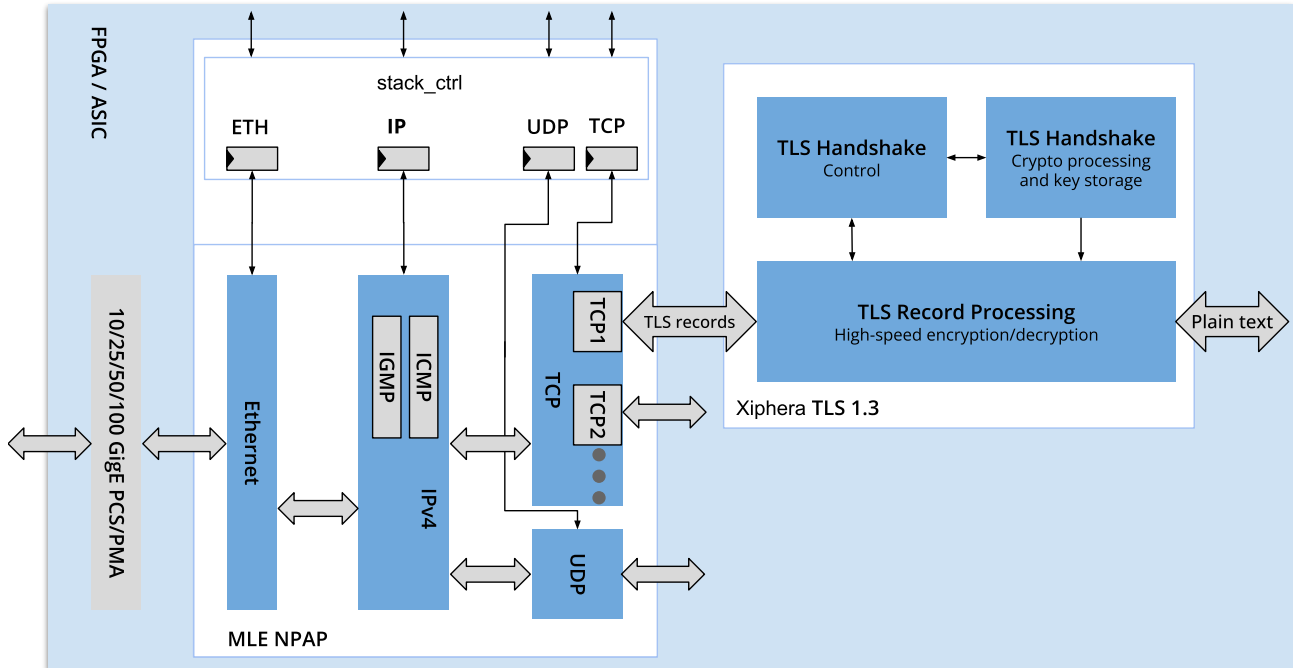


# Encrypted Network Acceleration Solution (ENAS)

## TCP-TLS 1.3 for Secure 10/25/50 GigE

ENAS is a joint solution to ensure secure and reliable connection between devices over LAN and WAN. It implements Transport Layer Security (TLS), a cryptographic protocol that provides end-to-end data security, on top of the Transmission Control Protocol (TCP) layer.



Resource-optimised IP core available for FPGAs and ASIC designs



High-speed traffic encryption and decryption



Secure design - Isolated processing and key management



All communication layers pre-designed for effective and fast integration

### Key Features

- Highly modular TCP/UDP/IP stack with line rate up to 70Gbps in FPGA
- Compact TLS 1.3 implementation
- Hardware-based key management for IEC 62443 SL 3
- Encrypted throughput of 10/25/50 Gbps
- 128-bit bi-directional data paths with streaming interfaces
- Multiple, parallel TCP engines for scalable processing

### Secure Communications for

- FPGA-based SmartNICs
- In-Network Compute Acceleration (INCA)
- Networked storage, such as iSCSI
- Test & Measurement connectivity
- Automotive backbone connectivity
- System-of-Systems communication
- Mission-critical environments

AMD/Xilinx Zynq Ultrascale+ Resource Utilization Estimation for 10GbE	LUT	FFs	RAMB 36	RAMBI 8	DSP 48
NPAP ( Including MAC, ETH, IPv4, UDP, 3x TCP)*	33500	35000	71	10	6
TLS1.3 (Including Crypto Engine, Key storage and handling)*	43000	28000	25	18	4
Total	76500	63000	96	28	10

\* Resource Utilization depends on number of TCP Sessions and speed of the TLS connection.

## Xiphera Ltd.

Xiphera, Ltd, is a Finnish company designing hardware-based security solutions using standardised cryptographic algorithms. We have strong cryptographic expertise, extensive experience in system design, and deep knowledge on reprogrammable logic, enabling us to protect our customers' critical information and assets.

Xiphera's product portfolio consists of secure and efficient cryptographic Intellectual Property (IP) cores, designed directly for Field Programmable Gate Arrays (FPGAs) and Application Specific Integrated Circuits (ASICs). Our widely applicable solutions for various end markets offer our customers peace of mind in a dangerous world.



PEACE OF MIND IN A DANGEROUS WORLD

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## Missing Link Electronics (MLE)

Missing Link Electronics is a Silicon Valley based technology company with offices in Germany. MLE is a partner of leading electronic device and solution providers and have been enabling key innovators in the automotive, industrial, test & measurement markets to build better Embedded Systems, faster. MLEs mission is to develop and market technology solutions for Embedded Systems Realisation via pre-validated IP and expert application support, and to combine off-the-shelf FPGA devices with Open-Source Software for dependable, configurable Embedded System platforms. Missing Link Electronics expertise is Domain-Specific Architectures I/O connectivity and acceleration of data communication protocols, additionally opening up FPGA technology for analog applications, and the integration and optimisation of Open Source Linux and Android software stacks on modern extensible processing architectures.



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