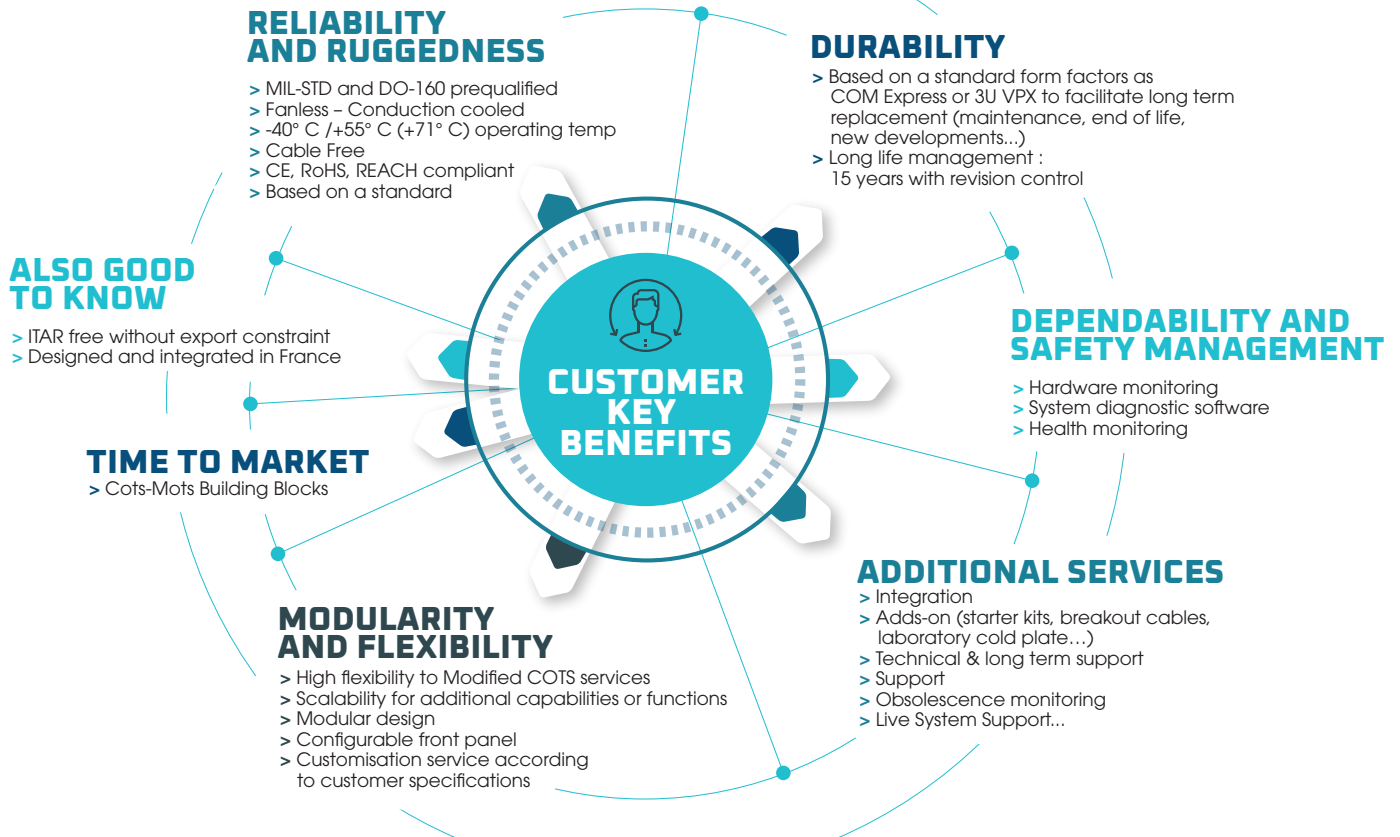




# RUGGED EMBEDDED Systems

ECRIN Systems: Your partner for high-performance computers  
and communication systems

# RUGGED EMBEDDED Systems



## Rugged, Application-Ready Embedded Systems for Extreme Environments

Designed for field-deployed applications in military, defense, aerospace, and security sectors, our application-ready embedded systems are pre-qualified to meet the most demanding environmental and operational challenges. Where traditional industrial PCs like standard “PC Box” solutions fail, our rugged embedded computers thrive.

With proven resilience in harsh conditions—extreme temperatures (start-up and operational), intense shock and vibration, dust, humidity, salt fog, and more—our systems are built to deliver maximum reliability, durability, and performance in mission-critical operations.

## Mission-Ready. Field-Proven. Built for the Harshest Conditions.

Powered by COM Express processor modules and fully qualified to DO-160 and MIL-STD-810 standards, the nanoONYX and ONYX series of COTS and Modified COTS embedded computers delivers a high level of flexibility and scalability in SWaP-C-constrained environments. Featuring a heterogeneous architecture combining

CPU, GPU, and FPGA resources, these systems are optimized for high-performance computing with exceptional GFLOPS/Watt efficiency.

For advanced defense and tactical applications, the TOPAZE series offers multi-slot, conduction-cooled 3U VPX embedded computers in compact SFF chassis. Designed for scalable OpenVPX architectures, TOPAZE platforms are ideal for Radar, Sonar, EW, SIGINT, ELINT, and SDR applications.

## Seamless Integration with Rugged Communication Solutions: QUARTZ and MIL Series

Completing ECRIN’s rugged system portfolio, the QUARTZ and MIL communication product lines are designed and qualified to the same high standards as our embedded computers. Engineered for mission-critical industrial and MIL-AERO applications, these rugged network systems offer not only robust environmental resistance, but also deliver advanced network security and deterministic communication services. This ensures secure, real-time data transmission even in the most constrained and sensitive operational contexts—where reliability, predictability, and cybersecurity are paramount.





## nanoONYX

**Ultra Small Form Factor Rugged Computer for Aero/UAV**  
COM-Express Module Type 10 – 4x I/O expansion slots 1,9kg, Up to 30Watts

- > Intel Atom E3950, Intel Core i7-8665UE, Intel Core i7-1185GRE
- > RAM Capacity up to 16GBytes
- > TPM2.0
- > 1x DVI-D, 2x Gb Ethernet, 2x RS232, 2x RS422, Audio Line In, Line Out, 2x GPI, 2x GPO, 4x USB2.0, 1x M.2 Slot, 4x Expansion Slots
- > Optional HoldUp module



## nanoONYX-rd

**Ultra Small Form Factor Rugged Computer for Aero/UAV, with removable 2"5 SSD**  
COM-Express Module Type 10 – 4x I/O expansion slots – 1x removable 2"5 SSD 3,2kg, Up to 30Watts

- > Intel Atom E3950, Intel Core i7-8665UE, Intel Core i7-1185GRE
- > RAM Capacity up to 16GBytes
- > TPM2.0
- > 1x DVI-D, 2x Gb Ethernet, 2x RS232, 2x RS422, Audio Line In, Line Out, 2x GPI, 2x GPO, 4x USB2.0, 1x M.2 Slot, 4x Expansion Slots, 1x removable 2"5 SSD



## ONYX

**Rugged Computer for Situation Awareness, C4ISR, EW, Vision, GPU, ...**  
COM-Express Module Type 6 – 2x I/O expansion slots – NVIDIA GP-GPU 7,3kg, Up to 90Watts

- > Intel Xeon E-2276ML, Intel Xeon W-11865MRE
- > RAM Capacity up to 64GBytes
- > TPM2.0
- > MXM Slot for NVIDIA T1000, A2000
- > Up to 3x DVI-D, 3x Gb Ethernet, 4x RS232/RS422/RS485, Audio Line In, Line Out, 8x GPIO, 4x USB2.0, 1x 2"5 SSD, 1x PMC Slot, 1x miniPCIe slot
- > Optional USB3.0, Gb Ethernet optical fiber



## µTopaze

**Rugged Computer for Situation Awareness, C4ISR, EW, Vision, GPU, ...**  
3U VPX Platform, Intel Xeon + NVIDIA GP-GPU 10kg, Up to 150Watts

- > Xeon W-11555MRE, 32GBytes
- > TPM2.0
- > 1x 3U VPX Slot for NVIDIA 4500, with optional HD-SDI input / output
- > 1x DVI-D, 2x Gb Ethernet, 1x 10GBase-LR, 2x RS232, 2x USB2.0, 1x USB3.0, 1x removable 2"5 SSD, 1x M.2 Slot, 1x 3U VPX expansion slot

# RUGGED Switch Series



## Quartz Switch Routers



**Small Form Factor Rugged Ethernet Switch – 10 ports  
1,9kg, Up to 30Watts**

- > 8x ports 10/100/1000Base-T
- > 2x fiber optic ports 1000Base-SX or 10GBase-SR (LX/LR on request)
- > Based on FPGA module designed by SOC-E.

### Quartz families

- > Quartz-EL: Entry Level L2/L3 Switch Router
- > Quartz-SR: L2/L3 Switch Router
- > Quartz-SSR: L2/L3 Secure Switch Router (VPN, Firewall, ...)
- > Quartz-SSR-GM: Time Server and L2/L3 Secure Switch Router
- > Quartz-SR-TSN: Time-Sensitive Networking Switch

## MIL Switch Routers



SOC-E

**Rugged Ethernet Switch – Up to 26 ports  
3,2kg, Up to 35Watts**

- > Up to 22x 10/100/1000BaseT Copper Ethernet ports
- > Up to 6x 1GbE/10GbE Fibre Optic Ethernet ports
- > Based on FPGA

### MIL families

- > MIL-SR: L2/L3 Switch Router
- > MIL-SSR: L2/L3 Secure Switch Router (VPN, Firewall, ...)
- > MIL-GM: Time Server and L2/L3 Switch Router
- > MIL-TSN: Time-Sensitive Networking Switch



143, rue Louis Neel  
Parc Technologique du Pré Roux  
38920 Crolles - France  
Tel: +33 (0)4 76 92 20 01  
[sales@ecrin.com](mailto:sales@ecrin.com)

Visit



[www.ecrin.com](http://www.ecrin.com)

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