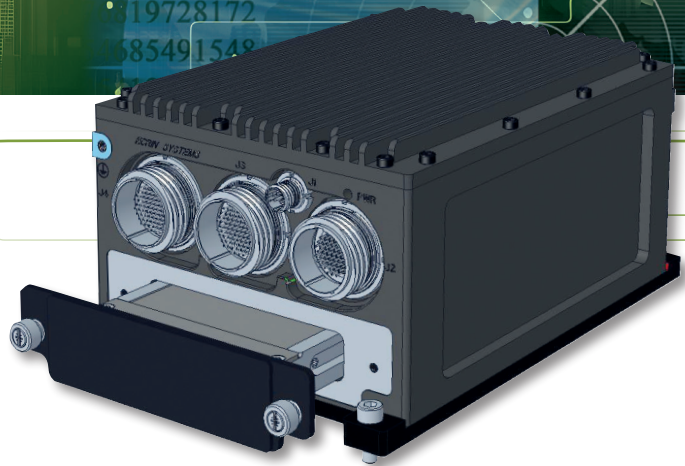


nanoONYX-rd



Ultra Small Rugged Computer with removable disk



DESIGNED & PRODUCED
IN FRANCE

Ultra-SFF rugged embedded computer with removable disk

The nanoONYX-rd with removable disk is a rugged and secure computer, specially designed to meet the stringent requirements of critical aerospace, military and industrial applications.

Based on the latest generation of Intel processors and qualified according to the military equipment environmental standards (DO-160, MIL-STD-810 & MIL-STD-461), the nanoONYX-rd is a low-power, rugged, and scalable computing solution for air, land and sea systems.

With its low consumption and IP65 design, the nanoONYX-rd is the ideal solution for users looking for an ultra-compact and powerful rugged computer offering both a wide range of interfaces and a secure removable disk capacity.

The nanoONYX-rd removable disk offers storage flexibility and enhanced protection of sensitive data while guaranteeing their security.

The nanoONYX-rd:

- supports a wide range of processor as the Intel® Atom™ E3950 processor, the Intel® Core™ i7-8665UE, or the Intel® Core™ i7-1185GRE through Mini-COM Express processor module, type 10
- features four expansion slots supporting AcroPack® mPCIe-based Rugged I/O Modules and offering a large array of additional I/O as Ethernet, ARINC429, DAC, ADC, ...
- provides an access to the 2.5-inch SATA solid-state disks (SSDs) through a rugged front drawer

Using the nanoONYX-rd, system integrators benefit from a ruggedized, fully qualified and durable COTS solution with a high-quality technical support.

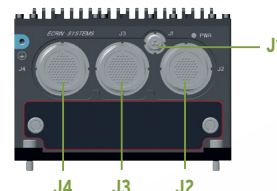
- Intel® Atom™ E3950 @ 1.6GHz, 12W, Quad-Core, 8GB DDR3L
- Intel Core™ i7-1185GRE @ 1.8GHz, 15W, Quad Core, 16GBBytes LPDDR4X
- Intel® Core™ i7-8665UE @ 1.7GHz, 15W, Quad-Core, 8GB DDR3L
- 1x DVI-D single link graphic output
- 2x GbE
- 2x RS-232, 2x RS-422 and 4x USB 2.0
- 4x AcroPack / mini PCIe expansion slots for Avionics and Industrial I/O
- TPM 2.0
- 1x internal M.2 SSD slot
- 1x removable 2.5 SATA SSD
- Fanless, MIL-DTL-38999 connectors
- Qualified according DO-160, MIL-STD-461, MIL-STD-810
- Operating temperature: -40°C to +55°C without external air flow +71°C depending on processor version and cTDP
- Long Life Management with revision control
- ITAR free
- High flexibility to Modified COTS services

System specifications

Processor / Memory	Intel® Atom™ E3950 @ 1.6GHz, 12W, Quad-Core, 8GB DDR3L Intel® Core™ i7-1185G7 @ 1.8GHz, 15W, Quad Core, 16GBytes LPDDR4X Intel® Core™ i7-8665UE @ 1.7GHz, 15W, Quad-Core, 8GB DDR3L
TPM	TPM 2.0 Infineon Software TPM (Intel® Core™ i7-8665UE)
Video	1x DVI-D single link output
Ethernet	2x 10/100/1000Base-T Ethernet (i210 / i219)
Audio	1x Line In, 1x Line Out
USB	4x USB2.0
Serial	2x RS232 (Tx, Rx, GND) 2x RS422 (Tx+, Tx-, Rx+, Rx-, GND)
GPIO	2x GP Inputs (LVTTL) 2x GP Outputs (LVTTL)
GPS	GPS antenna and 1 pps (via mini PCIe function)
Storage	1x M.2 (S42) SATA SSD internal slot 1x removable 2.5 SATA SSD (SATA interface)
Expansion slots	4x AcroPack / mini PCIe slots Supporting Ethernet, ARINC429, MIL-STD-1553, RS232/RS422, DIO, ADC, DAC, CAN bus, ...
Discrete I/O	On front panel: Power LED On MIL-DTL-38999 connector: Power button (ATX/AT CPLD mode), Reset button
Hardware Monitoring	Internal voltages; CPU and carrier board temperatures



Apollo Lake COMe Type 10



- J1: +28VDC; 3 pts
- J2: 2x GbE, DVI-D, 2x USB, RS 232/422, Antenna, 1x pps, PWR-ON & reset Btn; 55 pts
- J3: AP #3 & #4 (30-pin), 2x USB, RS 232/422, Audio; 85 pts
- J4: AP #1 (50-pin), AP #2 (30-pin), 4x GPIO; 85 pts

Power supply

Power Input	+28VDC (+12VDC up to +36VDC)
Power consumption	Up to 30W, 25W typic

SWaP-C constraints

Size (WxDxH)	205mm (L) x 140 mm (W) x 90.2 mm (H) including connectors
Cooling types	Conduction cooled system: convection & radiation by fins, conduction by cold plate or forced air flow
Connectors	MIL-DTL-38999 connectors Front panel customizable for specific applications

Environmental Qualification Tests

Operating temperature	-40°C to +55°C without external air flow +71°C depending on processor version and cTDP	Sand & Dust	Wind and fine dust particles; DO-160
Storage temperature	-40°C / +85°C	Shock & vibration	40g@11ms ; DO-160
Ingress protection rating	IP65	EMI / RFI	According to DO-160 / MIL-STD-461
Altitude	Up to 116 mbar (50000ft); DO-160	CE certification	EN 55032: 2015 / A1: 2019 Electromagnetic compatibility of multimedia equipment - Emission requirements EN 55035: 2017: Electromagnetic compatibility of multimedia equipment - Immunity requirements EN 62368-1:2014+AC:2015: Part 1: Safety requirement
Humidity	0%-95% @ 65°C and 0-85°C @ 38°C RH; DO-160		
Salt fog	50% salt spray @ 96h; DO-160		

Software corner

Operating system	Windows 10 32/64-bit, Linux 32/64-bit. For other requirements, contact ECRIN Systems
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Other specifications

Regulatory compliance	European CE Mark, REACH, RoHS, WEEE, CoC
Starter cable set	Breakout cable set mates with MIL-DTL-38999 connectors to break out standard CPU/I/O and power signals to traditional PC style interfaces for lab purposes
Development kit	Starter kit based on same hardware building blocks for quick and easy integration and debugging

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