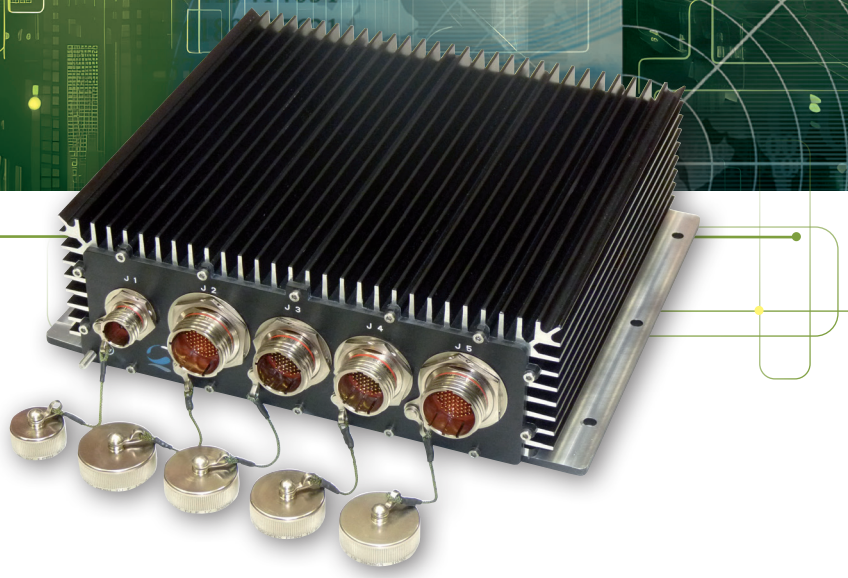
ONYX



"GPU ready" High Performance Rugged Mission Computer

DESIGNED & PRODUCED IN FRANCE

DO-160, MIL-STD-810 & MIL-STD-461 Qualified COTS for Control, Command, Communications, Intelligence, Surveillance and Reconnaissance applications

Being part of a complete range of rugged computers designed and manufactured by ECRIN Systems, the ONYX is a highly integrated processing system ready for deployments in extreme environments.

Powered by the latest generation of Intel® processors and qualified according to the military equipment environmental standards (DO-160, MIL-STD-810 & MIL-STD-461), the ONYX is a high performance, rugged and scalable computing solution for air, land, and sea systems.
The ONYX is ideally suited for all electronic warfare applications requiring ruggedized conduction-cooled system providing AI, graphics security capabilities.

Built on a modular and robust design, the ONYX offers the mil-aero market a completely qualified and customizable solution benefitting from a long-term support.

The ONYX features :

- a Intel® Xeon® processor through Type-6 COM Express processor module
- a MXM slot for supporting an additional powerful NVIDIA GP-GPUs
- expansions slots for mini-PCIe and PMC cards

Using the ONYX, system integrators benefit not only from state-of-the art design but also from a ruggedized, fully qualified and durable COTS based product with a high-quality technical support.

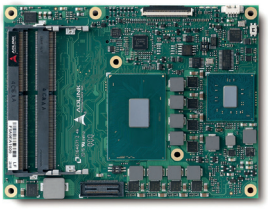
- Intel® Xeon® E-2276ML @ 2.0GHz, 6 cores, 64GB 2400MHz DDR4 ECC memory. cTDP limited to 25W
- Intel® Xeon® W-11865MRE @ 2.4GHz, 8 cores, 64GB 2900MHz DDR4 ECC memory. cTDP limited to 25W
- TPM 2.0
- 1x DVI-D single link graphic output
- 3x GbE
- 4x RS-232/RS-422 and 4x USB 2.0
- MXM expansion slot for demanding application requiring GP-GPU device
- PMC and mini-PCI Express slots for flexible I/O expansion and Wireless functions
- 1x internal 2"5 SSD slot
- Cableless, fanless, MIL-DTL-38999 connectors
- Qualified according to DO-160 and MIL-STD-810/461
- Operating temperature: -40°C to +55°C Up to +71°C depending on the processor version and the cTDP
- Long Life Management with revision control
- ITAR free
- High flexibility to Modified COTS services

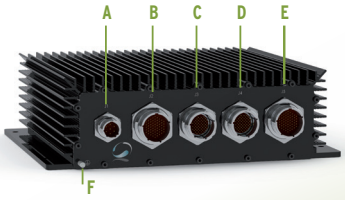
ecrin SYSTEMS

ONYX

System specifications

Processor / Memory	
COM-Express Basic Size	Intel® Xeon® E-2276ML @ 2.0GHz, 6 cores, cTDP limited to 25W Intel® Xeon® W-11865MRE @ 2.4GHz, 8 cores, cTDP limited to 25W
Memory	Dual channel ECC DDR4 memory up to 64GB
Video outputs	1x DVI-D Single Link (Intel HD Graphic) 2x DVI-D with MXM module featuring NVIDIA GP-GPU. (cTDP limited to 25W - 30W).
Ethernet	3x 10/100/1000 BaseT 1x 1000Base-SX (On request with specific rear panel)
Serial	4x RS232/RS422/RS485 (software configurable)
USB 2.0	4x USB2.0 High / Full / Low speed
USB 3.0 (On request)	MIL-DTL-38999 USB Field connector on rear panel
Audio	Intel® HD Audio: 1x In and 1x Out Lines
Discret I/O	8x GPIO LV TTL - Reset, Power Button, Power Led, HDD Led, Fast Erase
I/O Expansion slots	1x PMC slot 1x mini PCIe slot
GP-GPU Expansion slot	1x MXM slot for NVIDIA GP-GPU
Solid State Disk (SSD) (Internal)	1x SSD 2.5'' slot
Hardware monitoring	Internal voltages; CPU and carrier board temperatures
Watchdog timer	Programmable timer range to generate RESET





A: Power supply
B: USB, Serial, GPIO, DVI-D + VGA
C: Ethernet, Audio
D: GPGPU I/O
E: PMC I/O's
F: Ground

Power supply

Power Input	+28VDC (+14VDC up to +36VDC) Hold-up capacitors for momentary power interruption protection (120ms)
Power consumption	From 45W to 90W (depending on the Bill Of Material)

SWaP-C constraints

Size (WxDxH)	Standard version: 300mm x 250mm x 88mm (2U) With 1000Base-SX interface or USB3.0: 300mm x 330mm x 88mm (2U)
Weight	7.5kg
Cooling type	Convection & radiation by fins, conduction by cold plate (conduction cooled inside)
Connectors	MII-DTL-38999 connectors Customizable front panel for specific application

Environmental Qualification Tests

Operating temperature	Operating temperature -40°C to +55°C without external air flow. Up to +71°C depending on the processor version and the cTDP	**Sand & Dust**	Wind and fine dust particles (DO-160)
Storage temperature	-40°C / +85°C	**Shock & vibration**	DO-160 / MIL-STD-810G
Ingress protection rating	IP67	**EMI / RFI**	DO-160 / MIL-STD-461F
Altitude	Up to 15000 feet (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 requirements
Humidity	0%-95% relative humidity (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

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 standard interfaces for lab purposes
Development kit	Open Starter kit based on same hardware building blocks for quick and easy integration and debugging

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