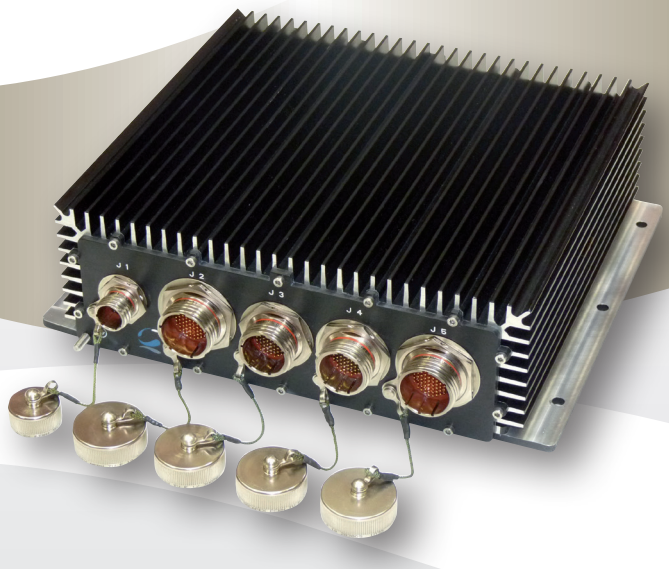
ONYX

"GPU ready" High Performance Rugged Mission Computer



DESIGNED & PRODUCED IN FRANCE

DO-160, MIL-STD-810 & MIL-STD-461 Qualified COTS for Vetronics, Aeronautics, Defense & Security,...

ONYX is a fully integrated computing system ready for deployments in extreme environments designed by ECRIN Systems. Its compact footprint makes it ideal for space constrained applications such as ground vehicles, manned & unmanned aircrafts, helicopters, UAV, naval equipment or any other applications in harsh environment requiring extreme reliability.

Other products could draw your attention: nanoONYX, µONYX, µTOPAZE, ...

ONYX features Intel® Xeon® E-2276ML processor with TDP of 25W. Thanks to its MXM slot, it supports an additional powerful GP-GPUs from NVIDIA.
For higher performance, ONYX also supports Intel® Xeon® E-2276ME with a TDP limited to 35W (cTDP).

ONYX is built on a modular concept that offers a large flexibility and Long-Life Management:
- COM Express processor module, type 6
- Expansion slots for mini PCIe and PMC cards
- MXM slot for GP-GPU card

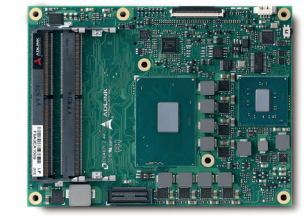
ONYX supports extreme environmental conditions and is fully qualified according military norms as DO-160, MIL-STD-810, MIL-STD-461. Therefore, it saves strongly your design and Environmental Qualification fees.

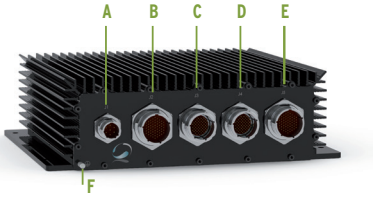
- Intel® Xeon® E-2276ML 25W, 6C/GT2, 64GB 2133/2400 MHz DDR4 ECC memory
- Intel® Xeon® E-2276ME 35W (cTDP), 6C/GT2, 64GB 2133/2400 MHz DDR4 ECC memory
- TPM 2.0
- 1x DVI-D single link graphic output
- 3x GbE
- 4x RS-232/RS-422 and 4x USB 2.0
- MXM expansion slot for demanding application requiring GP-GPU 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 up to +71°C (depending on the processor version and the cTDP)
- Long Life Management with revision control
- ITAR free without export control
- High flexibility to Modified COTS services

ecrin SYSTEMS

ONYX

System specifications	
Processor Module COM-Express Basic Size	Intel® Xeon® E-2276ML 25W, 6C/GT2 Intel® Xeon® E-2276ME 35W (cTDP), 6C/GT2
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® Quadro® Embedded GPU (TDP limited to 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 (MLC or SLC)
Hardware monitoring	Voltages, CPU, GPU, 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 (150ms)
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: 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	-40°C / +71°C (depending on configuration and cooling system)	Salt fog	50% salt spray / 96h (DO-160)
Storage temperature	-40°C / +85°C	Sand & Dust	Wind and fine dust particles (DO-160)
Ingress protection rating	IP67	Shock & vibration	DO-160 / MIL-STD-810G
Altitude	Up to 15000 feet (DO-160)	EMI / RFI	DO-160 / MIL-STD-461F
Humidity	0%-95% relative humidity (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

Software corner	
Operating system	Windows 10 32/64-bit, Linux 32/64-bit, ElinOS.. For other requirements, contact ECRIN Systems

Export control classification	
	ITAR Free - No export control

Other specifications	
Regulatory compliance	European CE Mark, REACH, RoHS, WEEE, CoC
Warranty	1-year return to factory (extended warranty available with service contract)
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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