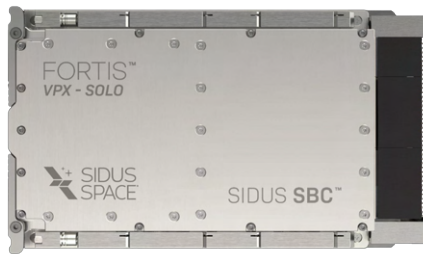


Sidus Single Board Computer (SSBC)

High Performance On-board Computer



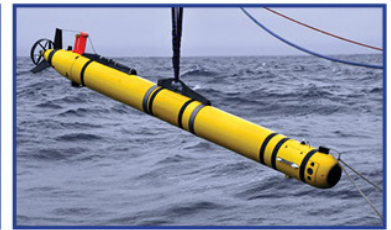
The Sidus Single Board Computer (SSBC) is a rugged, modular 3U VPX solution designed for size-constrained and mission-critical applications and engineered for high-performance computing in extreme environments.

The SSBC is a part of the Fortis™ suite, which includes the following product line options:

- » FeatherEdge™ AI/ML Processor
- » Position, Navigation, and Timing (PNT)
- » Global Positioning System (GPS) Receiver
- » Custom Input/Output (I/O) Card
- » Power Converter Card
- » Software Defined Radio (SDR)

Key Features

- » **High-Performance Processing** - Powered by a Quad-Core ARM® processor delivering 30,000+ DMIPS and 45,000 CoreMarks for compute-intensive tasks
- » **Secure Boot and Scalable Memory** - Features secure 64 GB QSPI Flash, DDR4 RAM, 64 GB NAND Flash, and 512 GB User Flash with triple watchdogs for enhanced reliability
- » **High-Speed Connectivity** - Supports 10 Gbps SerDes, PCIe® Gen3, Ethernet, UART, and JTAG for fast data transfer and streamlined development
- » **Comprehensive OS Support** - Includes support for Linux (5.15 kernel) and provide a BSP and a Docker-based build environment for Yocto 4.0 ("Kirkstone")



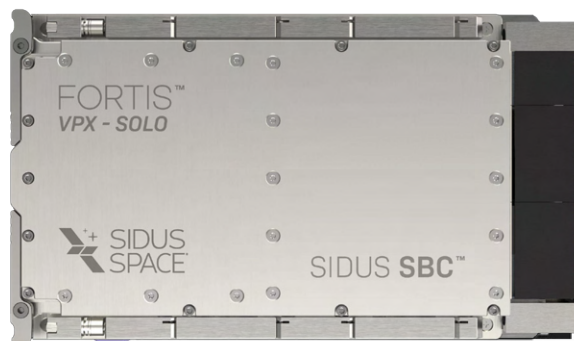
Land

- » Active Protection Systems
- » Command and Control (C2) Network
- » Degraded Visual Environment Processing
- » Ground Support Equipment
- » Integrated Visual Augmentation Systems (IVAS)
- » On-platform Cognitive Electronics Warfare (EW)



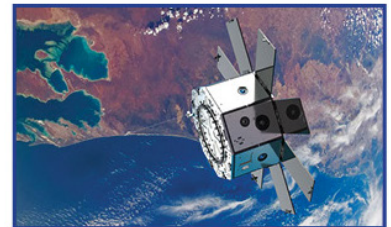
Air

- » Airborne Drones
- » Airborne Optronics
- » Intelligence, Surveillance, and Reconnaissance (ISR)
- » Unmanned Systems



Sea

- » Submarines
- » Surface Ships
- » Underwater/Subsurface Drones



Space

- » Counterspace Operations
- » Satellites
- » Space Defense
- » Space Situational Awareness



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Sidus Single Board Computer (SSBC)

High Performance On-board Computer



Sidus Single Board Computer (SSBC) Specifications

System Architecture	System on Chip (SoC)	Teledyne e2V QLS1046 » High-speed security protocol processing, including IPsec, SSL, TLS, and IKE		
	Processor	Quad Core ARM® Cortex®-A72 » 64-bit ARM® Cortex®-A72 (with ECC-protected L1 and L2 cache memories) » RAM 4GB / 8GB DDR4 with ECC, 72-bit interface, operating @ up to 1050 MHz » Up to 1.8 GHz operation		
	FPGA	Rad-hard PolarFire® up to 5 Softcore RISC V Processors (RTOS)		
	Board Resources	» Watchdog (x2 SoC internal and x1 SoC external) » Temperature sensors » Voltage sensors		

Memory Resources	QSPI Flash	64 MB	Mechanical	Dimensions	3U VPX Slot (100 mm x 160 mm)
	NAND Flash	64 GB		Weight	750g

I/O	Gigabit Ethernet (10/100/1000Base-T)	3	Power	Input Power	12 VDC and 3.3 VDC
	10 Gigabit Ethernet (10GbE)	2		Power Consumption	» 15-25 W under typical load » Max 50 W when board is fully utilized
	USB 2.0	1	Environmental	Cooling Method	Conduction-cooled
	USB 3.0	1			Operating Temp
	Serial Ports (RS422)	2		Max. +125° C	
	1 PPS	1 IN		Vibration (3 Axes) MIL-STD-810H	0.024G / 25 Hz
	I2C	2			0.15G / 150 Hz
	CANbus	1			0.15G / 1 kHz
	PCIe®	1x PCIe® x2 1x PCIe® x1		Random (Freq)	0.02G / 0-2 kHz
	Differential Pairs / Single-ended	14 / 28		Sine (Freq)	10G / 0-500 Hz
				Shock (3 Axes)	20G / 5 mS

Orbit Type		Terrestrial	LEO	GEO
Radiation Tolerance (TID)		N/A	30 krad	In Development
Latch Up Immunity (SEL/SEE)		N/A	37 MeV-cm²/mg	In Development
Relative Humidity		0-95%	N/A	N/A
Part Selection		MIL-SPEC	Rad-hard	Rad-hard



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