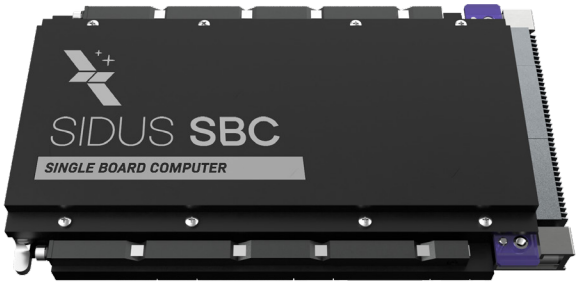
Sidus Single Board Computer (SSBC)

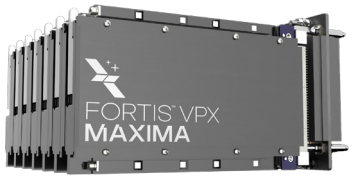
High Performance On-board Computer



The Sidus Single Board Computer (SSBC) is a standalone modular 3U VPX solution designed for extreme environments and size-constrained applications.

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

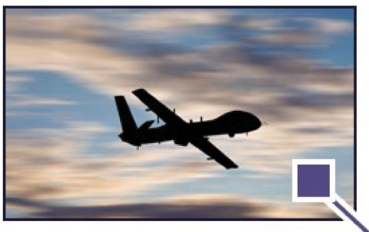
- FeatherEdge™ AI/ML Processor
- Position, Navigation, and Timing (PNT)
- Global Positioning System (GPS) Receiver
- Custom Input/Output (I/O) Card
- Power Converter Card
- Software Defined Radio (SDR)



Key Features

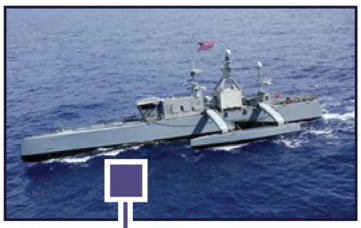
- **High-Performance Processing -** Powered by a Quad Core ARM® processor delivering 30,000+ DMIPS and 45,000 CoreMarks for demanding operational environments.
- **Secure Boot and Scalable Memory -** Secure QSPI Flash for reliable booting, with support for DDR4 RAM, 64 GB NAND Flash, and 512 GB User Flash. Triple watchdogs (2 internal, 1 external) enhance system reliability and security.
- **High-Speed Connectivity -** Includes 10 Gbps SerDes, PCIe® Gen3, Ethernet, UART, and JTAG interfaces for efficient data transfer and streamlined development.
- **Comprehensive OS Support -** Includes VxWorks Board Support Package (BSP), with optional support for Linux, PikeOS, and RTEMS to meet mission needs.

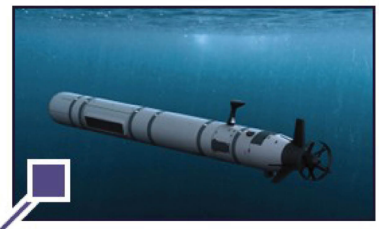
Applications



Air

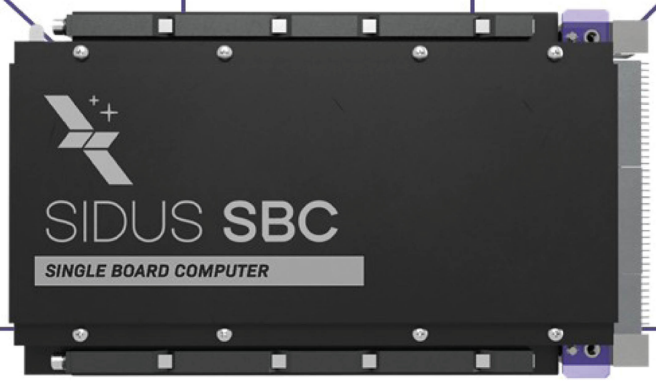
- Aerial Drones
- Ballistic Missiles
- Commercial and Civil Aircraft





Sea

- Submarines
- Surface Ships
- Underwater Drones



Land

- Command and Control (C2) Network
- Electronic Warfare (EW)
- Intelligence, Surveillance, and Reconnaissance (ISR)
- Unmanned Ground Vehicles (UGVs)

Space

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

SIDUS SPACE

FOR MORE INFORMATION
EMAIL US AT:
SALES@SIDUSSPACE.COM

150 N SYKES CREEK PKWY
STE 200 MERRITT ISLAND,
FLORIDA, USA 32953

SIDUSSPACE.COM
+1 (321) 450.5633

ITAR Compliant International Traffic in Arms Regulations

nqa ISO 9001 AS9100 INTEGRATED MANAGEMENT

ANAB ACCREDITED MANAGEMENT SYSTEMS CERTIFICATION BODY

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 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**	512 MB
	NAND Flash	64 GB
	User Flash	512 GB

I/O	**Gigabit Ethernet** (10/100/1000Base-T)	3
	10 Gigabit Ethernet (10GbE)	2
	USB 2.0	1
	USB 3.0	1
	Serial Ports (RS422)	2
	1 PPS	1 IN
	I2C	2
	CANbus	1
	PCIe®	1x PCIe® x2 1x PCIe® x1
	Differential Pairs / Single-ended	14 / 28

Software	» Linux OS » VxWorks » PikeOS » RTEMS

Mechanical	**Dimensions**	3U VPX Slot (100 mm x 160 mm)
	Weight	<1 kg (2.2 lbs)

Power	**Input Power**	12 VDC and 3.3 VDC
	Power Consumption	» 15-25 W under typical load » Max 50 W when board is fully utilized

Environmental	**Cooling Method**		Conduction-cooled
	Operating Temp	**Min.**	-55° C
		Max.	+125° C
	Vibration (3 Axes) MIL-STD-810H		0.024G / 25 Hz
			0.15G / 150 Hz
			0.15G / 1 kHz
	Random (Freq)		0.02G / 0-2 kHz
	Sine (Freq)		10G / 0-500 Hz
	Shock (3 Axes)		20G / 5 mS

Orbit Type	**Terrestrial**	**LEO**	**GEO**
Radiation Tolerance (TID)	N/A	25 krad	100 krad
Latch Up Immunity (SEL/SEE)	N/A	>40 MeV-cm²/mg	>75 MeV-cm²/mg
Relative Humidity	0-95%	N/A	N/A
Part Selection	MIL-SPEC	Rad-hard	Rad-hard
SEU Rate	N/A	$<2.56 \times 10^{-5}$ NA	$<2.56 \times 10^{-5}$ NA

SIDUS SPACE®

FOR MORE INFORMATION
EMAIL US AT:
SALES@SIDUSSPACE.COM

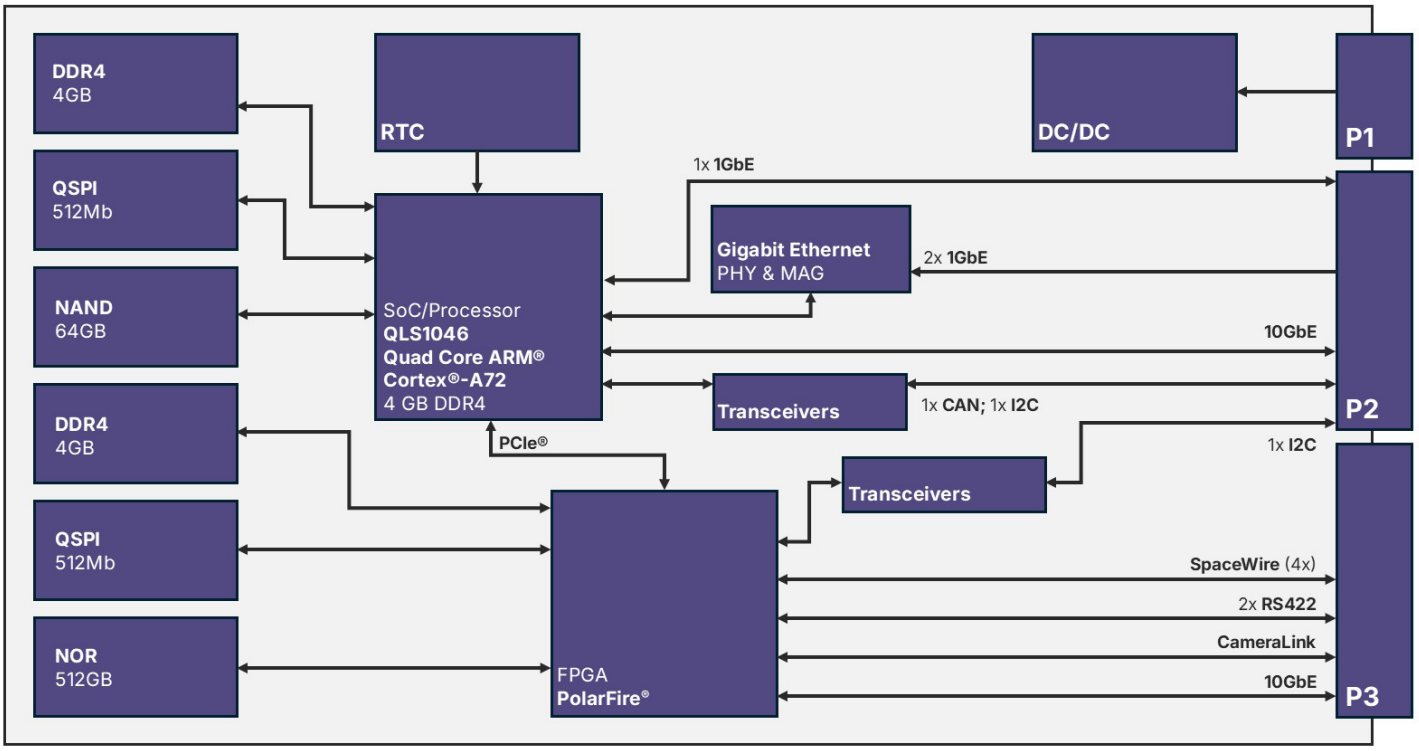
150 N SYKES CREEK PKWY
STE 200 MERRITT ISLAND,
FLORIDA, USA 32953

SIDUSSPACE.COM
+1 (321) 450.5633

Sidus Single Board Computer (SSBC)

High Performance On-board Computer

Sidus Single Board Computer (SSBC) Block Diagram | SOSA™ Profile 14.2.16



SIDUS SPACE

FOR MORE INFORMATION
EMAIL US AT:
SALES@SIDUSSPACE.COM

150 N SYKES CREEK PKWY
STE 200 MERRITT ISLAND,
FLORIDA, USA 32953

SIDUSSPACE.COM
+1 (321) 450.5633