# Fortis™ VPX

AI-Powered Command and Data Handling (C&DH) System

Fortis™ VPX is a compact, ruggedized command and data handling (C&DH) system designed for extreme environments and size-constrained applications.

Fortis™ VPX suite includes the following product line options:

» Sidus Single Board Computer (SSBC)
» FeatherEdge™ AI/ML Processor
» Position, Navigation, and Timing (PNT)
» Global Positioning System (GPS) Receiver
» Custom Input/Output (I/O) Card
» Power Converter Card
» Third Party Software Defined Radio (SDR)
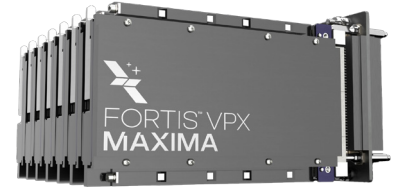
Key Features

» **Designed for Autonomous and Mission-Critical Systems -** Compact, ruggedized and built for multi-domain operations across air, land, sea, and space.

» **Powered by NVIDIA® Jetson AGX Orin™ Industrial -** Provides high-performance compute capabilities for embedded edge applications, enabling advanced multi-sensor perception, situational awareness, and data fusion in a compact, power-efficient form.

» **Optimized for Size, Weight, Power and Cost (SWaP-C) -** Tailored for unmanned platforms, cognitive electronic warfare, and C5ISR operations.

» **Rugged SOSA™ Aligned Design -** Featuring a 3U VPX / SOSA™-Aligned architecture, Fortis™ VPX ensures seamless integration, rapid deployment, and mission scalability across defense and commercial sectors.

Applications

Air
» Aerial Drones
» Ballistic Missiles
» Commercial and Civil Aircraft

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

Sea
» Submarines
» Surface Ships
» Underwater Drones

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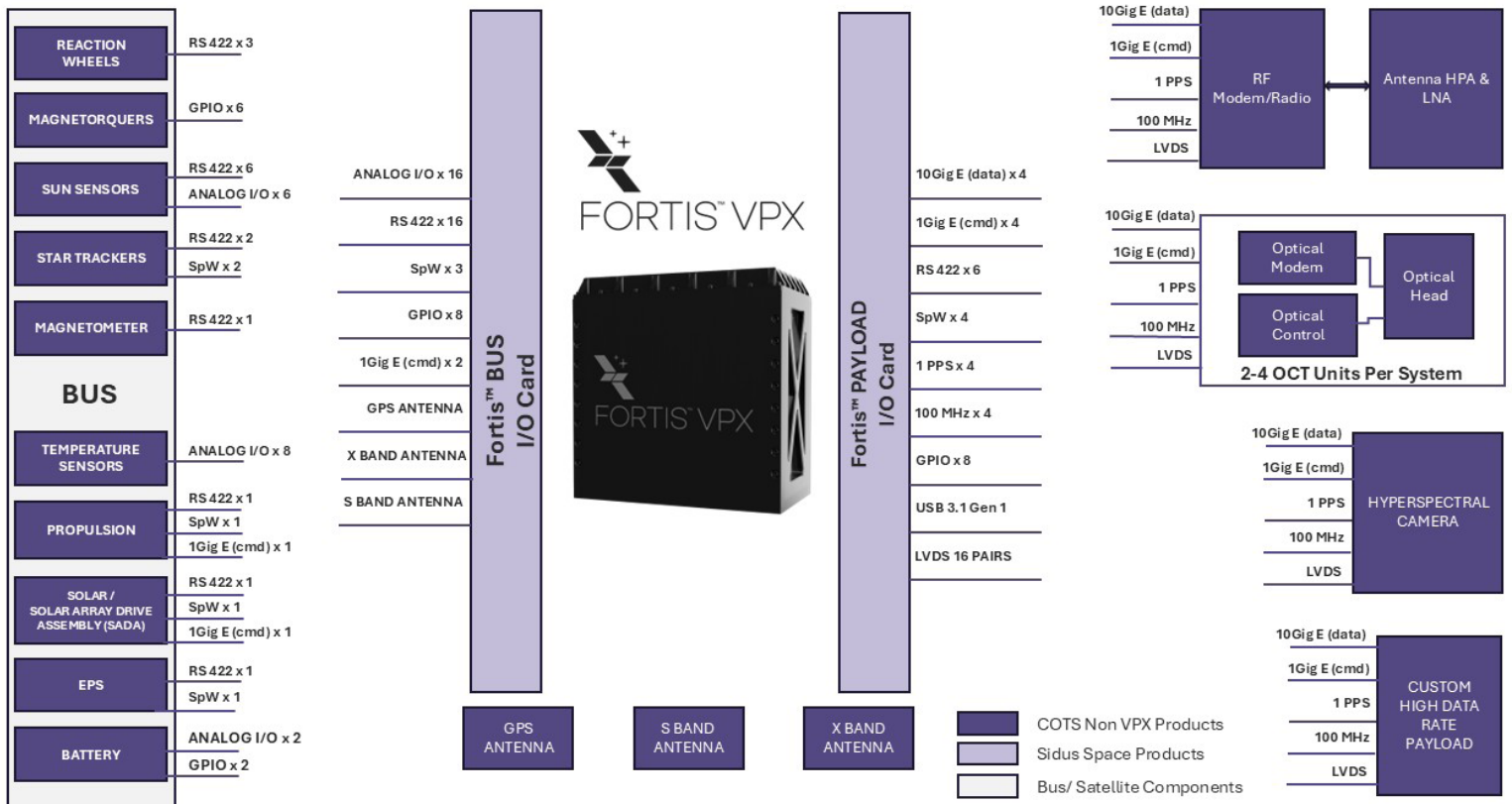» Satellites
» Space Defense
» Space Situational Awareness

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Fortis™ VPX C&DH System Specifications

System Architecture		
	Sidus SBC (SSBC)	Quad Core ARM® Processor, Rad-hard PolarFire® FPGA, 8 GB DDR4, 512 MB QSPI, 4 TB NOR Flash
	Position, Navigation, Timing (PNT)	GPS, Atomic/Rubidium Clock, 120 MHz OCXO, 125 MHz OCXO
	Software Defined Radio (SDR)	Software Defined Radio (S / X Band)
	Payload Processor Unit (PPU)	Quad Core ARM® Processor, Rad-hard PolarFire® FPGA, 8 GB DDR4, 512 MB QSPI, 4 TB NOR Flash
	FeatherEdge™ AI/ML Processor	NVIDIA® Jetson AGX Orin™ Industrial
	Microcontroller I/O Card	64-bit ARM® Cortex® M4, 3x H-Bridge, 8x Analog I/O
	Power Card	28 VDC / 12A, 330 W Max Power

I/O		
	LVDS	4x SpW + Camera Link + 16 LVDS Pairs
	Ethernet	4× 1 GbE, 2× 10 GbE
	USB	1x USB 3.1 Gen 1 (5 Gbps)
	UART	14x RS-422 + 2x RS-232
	PWM	3x DC Motor (Roll, Pitch, and Yaw -X, Y, and Z)
	Other I/O	2x SPI, 2x I²C, 16x GPIO, 16x Analog I/O

Environmental	Operating Temperature	Mln.	-55° C
		Max.	+125° C

Power	Input Power	28 VDC / 12 A
	Power Consumption	330 A Peak

Properties		
	Size	3U OpenVPX - SOSA™
	Technology Readiness Level (TRL)	TRL 9
	Operating System	Linux-based
	AI/ML Model Type	TensorFlow Lite
	Rad-hard	Up to 100 krad

Fortis VPX™ System | Support Architecture and Connections