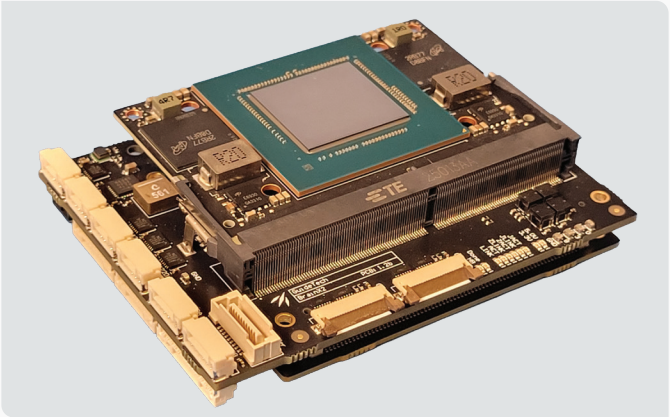
BRAIN X2

AI-ENABLED FLIGHT COMPUTER

OVERVIEW

BRAIN X2 is a high-performance, AI-enabled flight computer that consolidates flight controls, GNC, and onboard sensing into a compact form factor.

Its compute architecture pairs an NVIDIA SoM (up to 100 TOPS) for AI inference workloads with a dedicated AMD Zynq 7000 SoC for deterministic flight control and communications, keeping real-time GNC isolated from AI processing.



AUTONOMY MODULE

KEY SPECIFICATIONS

- NVIDIA Jetson Orin NX 16GB[1]
- 1024-core Ampere GPU
  - 100 TOPS
  - Up to 32 Tensor cores
- 8-core Arm-A78AE
- 2MB L2, 3MB L3
- 16GB 128-bit LPDDR5 (102.4 GB/s)
- Support up to 4 cameras
  - D-PHY 2.1 (up to 20 Gbps)
- 2x NVDLA v2 Deep Learning Accelerator
- 1x PVA v2 Vision Accelerator
- Flight-validated on autonomous platforms in operationally representative environments

NAVIGATION AND FLIGHT CONTROL COMPUTE

KEY SPECIFICATIONS

- AMD Zynq 7000 series SoC
  - 667 MHz Dual Core Arm-A9
  - 1GB RAM
  - 4 GB eMMC Flash
  - 32 MB Quad-SPI
- Integral Triple Redundant MEMS IMUs
- Integral Barometer
- Integral Magnetometer
- External GPS Module Connector
- Integral Safety Watchdog

SOFTWARE COMPATIBILITY

Compatible with the GuideTech FLEX flight software framework. Supports open software integration, delivering a fully integrated development platform that reduces integration effort and program risk.

MECHANICAL AND INTERFACES

KEY SPECIFICATIONS

Power Input	10-32 VDC
Power Draw	8W nominal, 30W max
Size	9.0 x 6.5 x 3.0 cm
Weight	97 g
Operating Temperature	0°C to 85°C

Interfaces[2]

- 4x RS-422/RS-485
- 4x Cameras (2xCSI MIPI-2)
- GigE Ethernet
- HDMI
- 11× GPIO, 3.3V TTL Configurable (Contact us for interface options)
- USB 3.0

WOSA-Compatible

Designed for compatibility with DoD Weapons Open Systems Architecture (WOSA) standards, easing integration with existing weapons rails, hardpoints, and platforms.

[1] BRAIN X2 is compatible with a variety of NVIDIA Jetson Orin modules.

[2] Additional custom I/O modules, such as CAN, SPI, and I2C, are available.

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