BRAIN FC1

MISSION-GRADE FLIGHT CONTROL COMPUTER

DETERMINISTIC GNC PERFORMANCE. PRODUCTION-READY AT SCALE.

OVERVIEW

The BRAIN FC1 flight control computer integrates real-time computing, flight control sensors, and flexible I/O into a compact avionics platform for precision guidance, navigation, and control (GNC). It delivers hardware-level, deterministic flight control and ships pre-integrated with the GuideTech FLEX flight software framework.

FLIGHT CONTROL COMPUTE

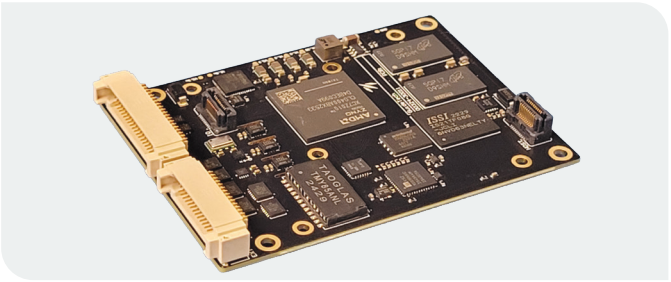
KEY SPECIFICATIONS

- AMD/Xilinx Zynq 7010/7020 SoC
  - Dual-Core Arm Cortex-A9 at 600 MHz
  - Integrated FPGA Fabric for deterministic processing and hardware level I/O
- 1 GB DDR3L RAM
- 32 MB Quad-SPI
- 4 GB eMMC Storage (minimum)
- Integral safety watchdog

ONBOARD SENSORS

KEY SPECIFICATIONS

- Integral Triple Redundant MEMS IMUs
- Integral Magnetometer
- Integral Barometer



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	8-30 VDC
Power Draw	5W nominal[1]
Size	6.0 x 8.0 x 1.45 cm (enclosure)
Weight	~45g
Operating Temperature	-40°C to 85°C

Interfaces

- GigE Ethernet
- 4× RS-422 / RS-485 with software-controlled active termination
- 2× CAN 2.0
- 24× GPIO (3.3V TTL)
- MicroSD Storage Slot
- Host Expansion Header (Vision/AI Processor)
- Debug Interface (Console + JTAG)
- I/O Expansion Header (supports optional expansion board)

WOSA-Compatible

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

Target Platforms

- Loitering Munitions
- Missiles and Interceptors
- Group 2-3 UAVs
- Hypersonic Vehicles

[1] Power draw varies by configuration and peripheral load. Contact us for application-specific power budgeting.

GuideTech, LLC
Kansas City, KS | Tucson, AZ
www.guide.tech
info@guide.tech
(1) 435-359-2440