

SWIFT™ Software Defined Radios

Powerful, Modular, Frequency-Agile Radios



Transformative Technologies
for Space, Sea, Earth, & Air

The SWIFT™ software defined radio (SDR) platform provides a modular architecture for delivering high performance, flexible, and SWaP-efficient communications for CubeSats and small satellites.

The SWIFT™ platform combines commercial components with intelligent design and fabrication processes to provide CubeSat and small satellite builders with high performance, reliable radio solutions. A high-density FPGA, significant onboard memory, precise clock synthesis, and high bandwidth analog converters enable SWIFT radios to be compatible with nearly any RF communications waveform. This high performance modular hardware and software architecture has the following key features:

- Small form factor ranging from 0.25U to 1U depending upon product
- Designed for >1 year LEO orbital lifetimes
 - Versatile Structural Radiation Shielding (VSRS™) provides radiation protection for operations in GEO and beyond Earth's orbit
- Application and frequency-band specific RF frontends are optimized for sensitivity, power consumption, and throughput
 - Current designs support up to 100 MHz instantaneous transmit and receive bandwidth
 - Future designs will support approx. 500 MHz instantaneous bandwidth
- Maximal operational flexibility through software control, on-orbit reprogramming, and failsafe boot procedures
- Flexible host interfaces including Type-1 encryption external module support enhance testing as well as reduce integration challenges

