



SPACECRAFT BUSES,
SYSTEMS & SOLUTIONS

SOFTWARE SIMULATORS



Blue Canyon Technologies offers two spacecraft simulation products to serve a variety of mission analysis to hardware-in-the loop needs: the GN&C Software Simulator and the Real-time Dynamics Processor (RDP). The GN&C Software is a desktop executable that meshes the GN&C flight code and high-fidelity simulations into a tool that runs up to 150x faster than real-time to support rapid mission planning and software behavior testing. The RDP is both a real-time spacecraft simulator and a command & telemetry ground test interface to the BCT avionics systems; this combination of features enables test-like-you-fly capability at both the unit and spacecraft level. The RDP features an Ethernet port for communication with a test PC and a connection to the unit under test for command and telemetry interfacing.

The common simulation present in both the GN&C Software Simulator and the RDP allows the user to initialize the simulated spacecraft to mission-specific conditions to create orbit-like scenarios. This customization offers users insight into the performance and behavior of the spacecraft under various expected and test cases that the real spacecraft may experience.

SOFTWARE
SIMULATORS

SOFTWARE SIMULATORS



RDP

TEST/GSE INTERFACE

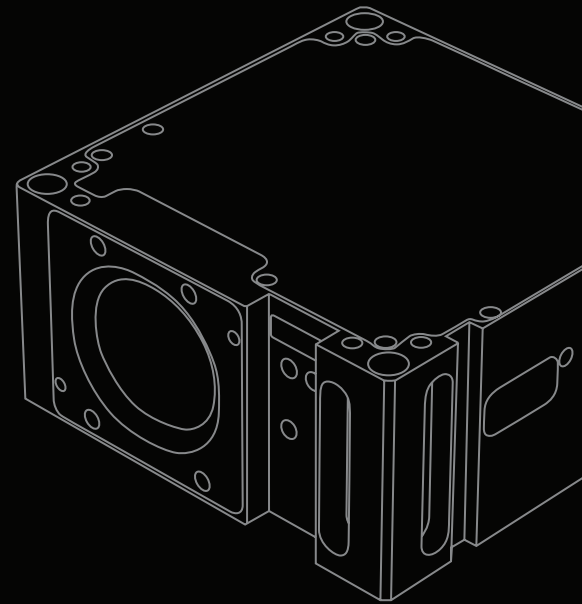
Ethernet

FLIGHT INTERFACE

RS-422 or RS-458,
LVDS for simulation

BCT SIMULATORS CONTAIN CAPABILITY TO MODEL:

- High-fidelity spacecraft dynamics
- Orbital dynamics and celestial bodies
- Actuator and sensor outputs
- Various fault injection cases



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