

Jeff,

The SpaceCube flew on the recent shuttle mission to service the Hubble Space Telescope. It was part of a system called Relative Navigation Sensors, a payload in the back of the shuttle bay. The main objective of RNS was to record images of the HST during the mission to enable a future robotic mission to HST for servicing or safe de-orbiting. RNS consists of three high resolution cameras, a GPS receiver, a command and telemetry module, two mass storage modules, and SpaceCube. SpaceCube is the brain of the RNS system. It is responsible for a variety of tasks including avionics control, two real-time image processing algorithms for position and attitude estimation, command and data handling, closed-loop camera automatic gain control, JPEG2000 image compression, radiation mitigation, and Space Shuttle KU-band interfacing.

SpaceCube enabled RNS to meet all on-orbit demonstration objectives and was a HUGE success! The high-speed image processing algorithms demanded the power of the processor cards to successfully track HST during rendezvous and deploy (I attached a PDF that shows two images we captured during rendezvous and deploy with an overlay of our tracking result...pretty much dead-on). We recorded over 500GB of HST imagery during the mission. During crew sleep, SpaceCube compressed and downloaded 20% of this data to the ground. I attached a video that SpaceCube captured and downloaded of the HST release after servicing was complete.

Please extend my thanks to the rest of your manufacturing team at CRI. The boards that you built under our tight schedule helped us in making this mission a success for us.

My group is now getting bombarded with SpaceCube work and inquiries...we have a few things on the table right now. We'll be in touch.