



BeagleBone For Embedded Control System Applications

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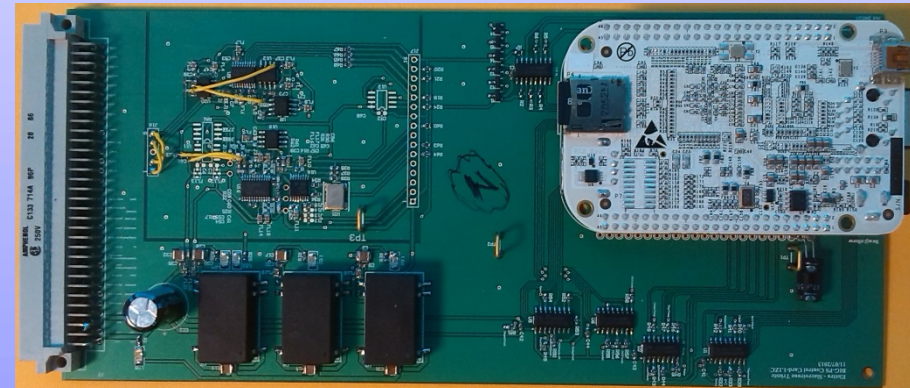
The BeagleBone embedded platform

- Small, flexible, powerful System-On-Chip
- Wide set of low level I/O (GPIO, SPI, ADC, DAC...)
- Ethernet
- USB
- High level operating system (Linux)
- Long-term availability and support (10Y)
- Low cost



Power Supply Controller

- Upgrade program aims at replacing the old VME controllers while maintaining the original power supply power circuits and control interface
- Linux + TANGO
- 24 bit SPI ADC + voltage reference
- 20 bit SPI DAC + dual voltage reference
- 22 digital inputs
- 6 digital outputs
- SPI managed by PRUSS real-time subsystem





Tip-Tilt Controller

- Feedback to keep the optical path of a laser beam stable
- CCD sensors and piezoelectric mirrors as actuators
- UDP-driven in real-time

- two channel 18 bit DAC
- full galvanic isolation
- parasitic capacity to ground $\sim 10\text{pF}$
- output amplifier peak current 200mA
- output amplifier analog bandwidth 1KHz
- capable to drive up to $10\mu\text{F}$ capacitive loads
- 0-24V voltage output

