

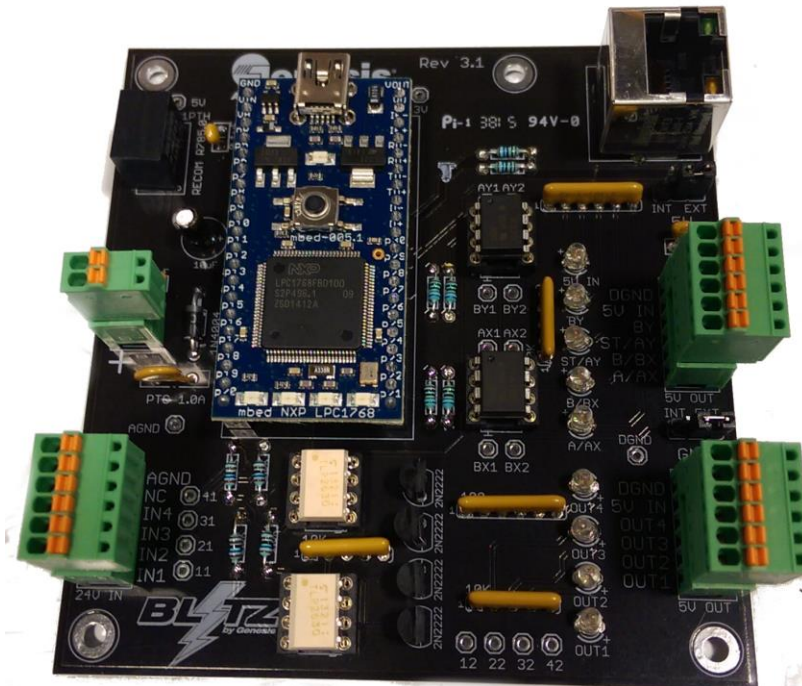
Genesis Case Study #: I1357-001

Application: Microcontroller Based Robot Position Encoder Output w/ Ethernet

Market Segment: Aerospace

Product: Blitz Board

Cycle Time: NA



Summary

The Blitz Board is a microcontroller based circuit board that provides robot position packets and simulated encoder outputs at a rate higher than what the robot can achieve (1ms/trigger). The board is completely remote from the robot controller and only requires 24VDC and an Ethernet connection. This allows one or more Blitz boards to be placed right next to the process gear (NDI equipment) thereby limiting electrical noise on the trigger line. The addition of high speed optocouplers on all outputs also reduce electrical noise on the trigger line. Quick disconnect connectors and a socket mounted microcontroller allow for easy upgrade and setup. The microcontroller also features a USB flash memory connection which means firmware upgrades are as easy as copying the file to the flash memory of the device and cycling power.

The provided encoder TTL outputs include 3 separate modes: 3D, 2D, or time based in 2 different types: StepDirec or AB.

Project Challenges

- Provide robot position Ethernet packet and encoder output at a high rate of speed
- Simplify build and deployment
- Reduce electrical noise wherever possible
- Provide functionality for various types of NDI systems

Genesis Solution

- Microcontroller based, optimized code
- USB firmware deployment, socket mounted microcontroller, through hole design
- Optocoupler outputs, decoupled input/output voltage, ground planes
- 3 modes and 2 types of outputs, programmable packet format