XeroHID

# Introduction

I have been a mentor with team Error Code Xero, 1425 out of Wilsonville Oregon. Every year we build an “OI” that is used by the gunner. This OI is based on the TI Launchpad board as they have support for building these kinds of OI devices for FRC robotics. This board can be used in one of three configurations. Our team has decided against using the analog inputs on these boards due to the issues with Windows PC calibration. Of the three configurations available via the TI Launchpad board, none of them provided the number of digital inputs and especially digital outputs we desired. More and more we used the digital outputs to relay state to the student operating the OI via visual indicators. We wanted an OI device that maximized the number of digital inputs and outputs. As such XeroHID was created.

XeroHID is a USB based HID device with an on board bootloader to provide the required HID functionality for an FRC OI. XeroHID provides …

* 6 analog inputs that can be sampled as joystick axis
* 24 digital inputs that can be sampled as buttons
* 16 digital outputs that can be set as ???

The XeroHID device also contains a bootloader that can be activated to upgrade the internal firmware via USB.

XeroHID is based on the Infineon CY8CPROTO-062-4343W development kit. This development kit was chosen because I work for Infineon and not only have easy access to the development kit, but I also understand the device and the development tools very well. In addition, this development kit was designed so that all of the peripherals that are usually available on microcontroller development kits can be snapped of provided almost unfettered access to a large number of device I/Os.

# Using XeroHID

# Building XeroHID

# XeroHID Design