|  |  |  |  |
| --- | --- | --- | --- |
| Subsystem: | Motor | Controller | Sensor |
| Chassis | LED rings |  | * + Camera (2)   + Ultrasonic Range Finder   + Robot Control Light   + Gyro/Accelerometer |
| Drive Train | CIMs | Jags (2) | * + Optical Encoders (2) |
| Climber | Servo | Spike | * + Altimeter? |
| Shooter |  | Jag | * + Optical encoder for wheel speed   + Light sensor for muzzle speed |
| Shooter Angle |  |  | * + Magnetic Encoder <= analog breakout potentiometer   + Limit Switches (2) |
| Hopper |  |  | * + Proximity sensor   + Limit switch (tentative. Mechanical decision) |
| Feeder |  | Spike |  |

Diagnostics:

* Encoder value on dash (all encoders)
* Potentiometers (show angle of shooter shot)
* Sensor feedback (ALL)
* Gyro
* Motor voltage
  + Input/output
* Motor current
* CAN signal break display
* Camera activity (when it's receiving data)
* Manual control of motors

Gear Ratio information:

feet / revolutions = revolutions / encoder tics = gear ratio \* pi \* wheel diameter = inches / tics

x feet / 1 revolution = 1 revolution / 360 encoder tics = (16/36)\*pi\*5.875 = 8.20 inches / 360 tics = **0.022 inches/tic**