

DIRC MONITORING UPDATE

04/25/17

ZEROth ORDER TEST

- Successfully SCPed and SSHed over a local network
- Flashed the router to access a factor of ~ 3 in the antenna power (up to $\sim 250\text{mW}$ from 71mW)
- Need inputs/field tests to go further



HARDWARE NEEDED

- Sensors
- “DAQ” computer
 - Needs lots of storage
 - Will be bouncing
- Power
- Inverter in the truck?



SENSORS

- Need Acceleration, temperature, pressure
- Below sensors + thermo couple will work
- Also need battery packs
- Cost is low, but not available on website (IU?)
- Flow sensors already extant (Connections?)



COMPUTER

- Recommendation: build a small desktop
- We want solid state drives of a reasonable size
- This is cheaper, and has more options
 - Would require AC power, might be able to route around that with a laptop
- A 1TB SSD laptop is \$1500-2000 (lenovo - \$1650)

COMPUTER PARTS DRAFT

- Basic case (\$40) – 2 2.5” bays
- Basic Motherboard (MicroATX) (\$55)
- 16 GB Ram (\$105)
- i5 processor (\$185)
- 450W Power Supply (\$50)
- 2X 1TB SSD (\$550)
 - Size needed depends heavily on format of pictures and longterm storage (save originals in bmp, png, or just the movie – H.264?)
 - 1TB is my estimate for png format with pictures every 10 sec from each camera, I would want 2 to be safe (barring knowledge of our expected png compression)
- **Total: \$985 (Slightly over specced)**

POWER

- We will have a lot of USB connections
 - ~16 cameras, plus sensors
 - Around 4-5A at 5V, usb spec is .5A per port
- Will need independent power (\$15-\$50)



WHAT WE NEED

- We need to test various scripts
- We need the cameras/sensors (or at least samples)
- We expect the scripting will be minor relative to “code bureaucracy”