



M21: Gopher Tortoise Scope

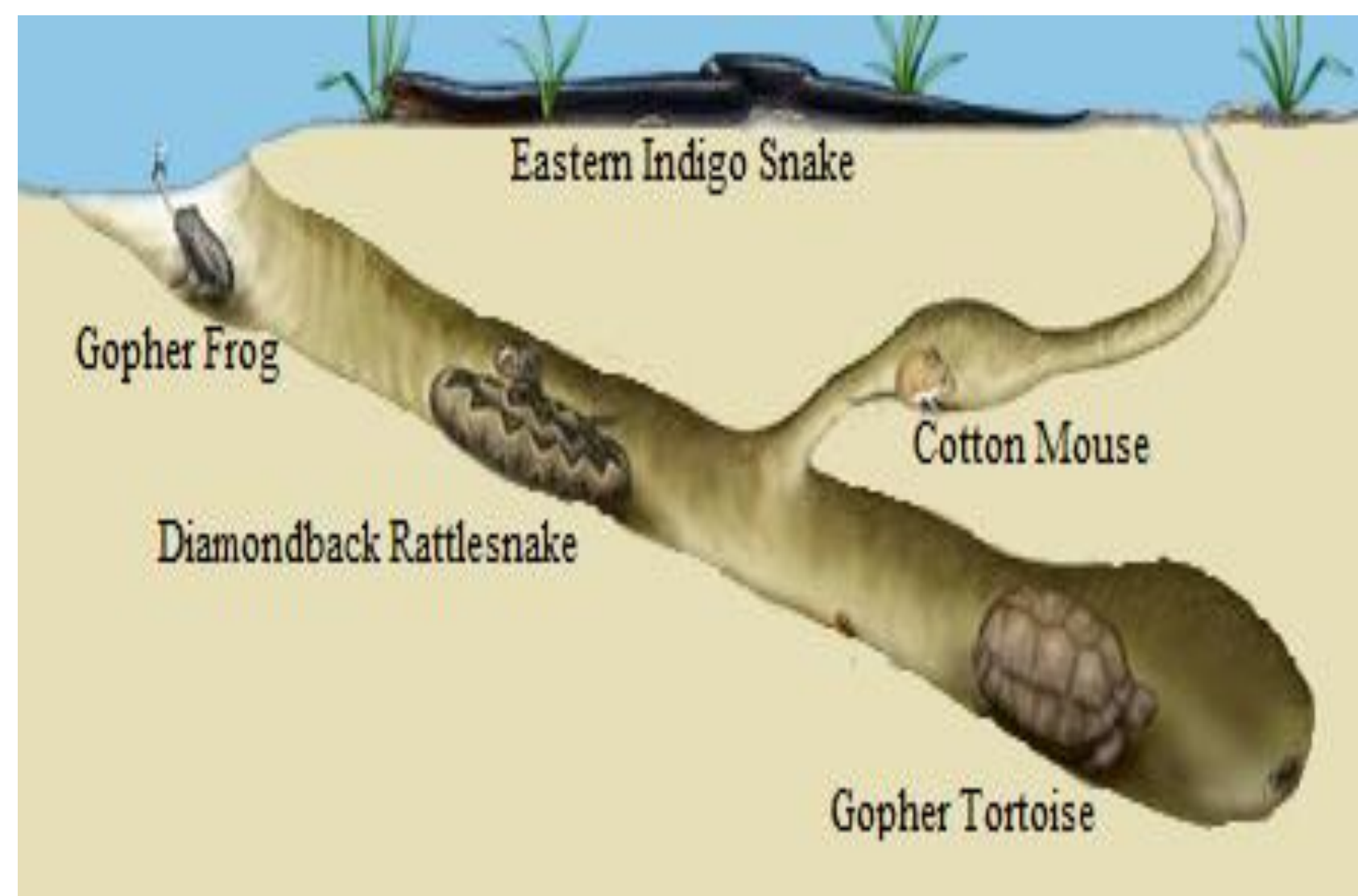


Sponsored by
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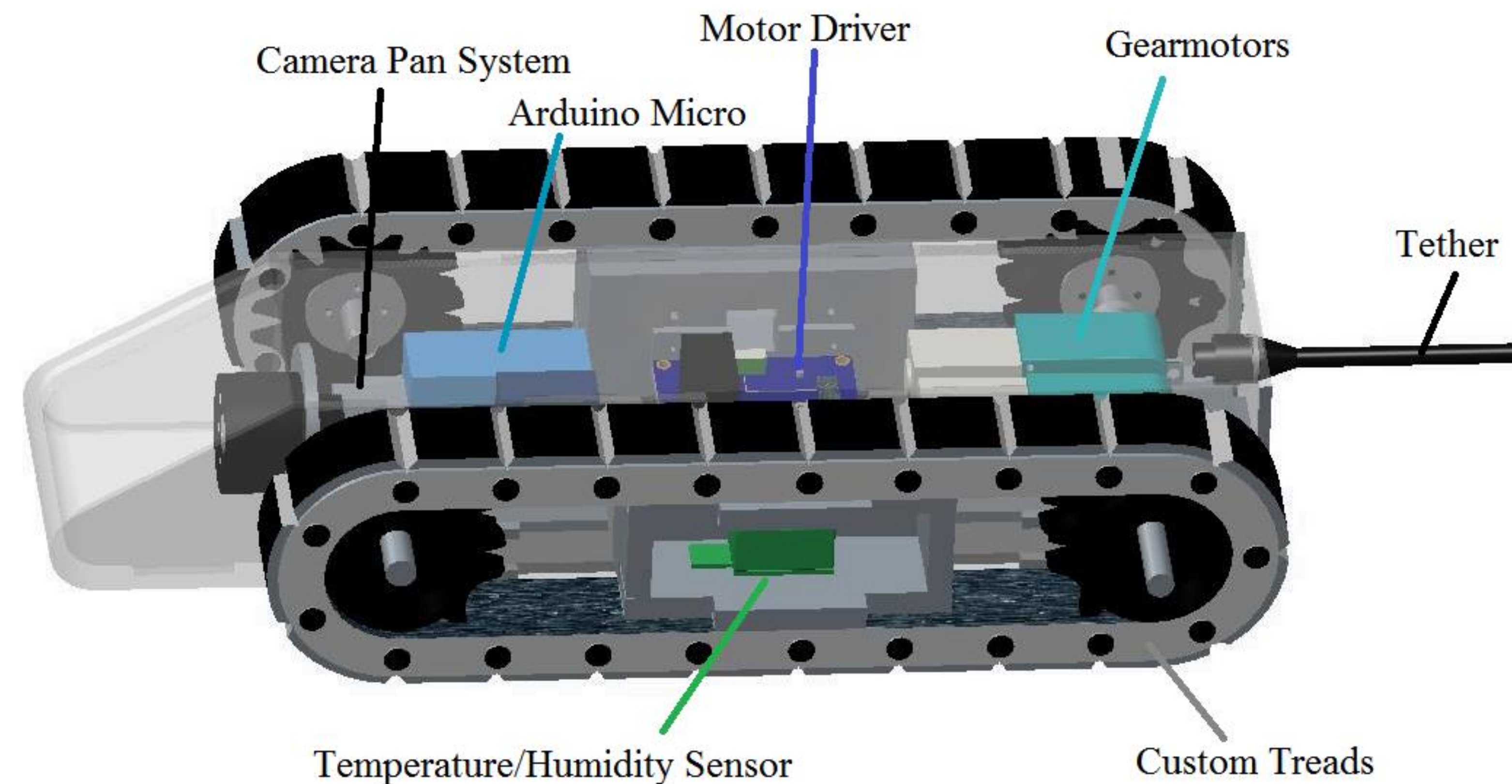
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Objective

The Tall Timbers Research Station & Land Conservancy studies burrowing gopher tortoises. Our goal is to enhance the surveying process of gopher tortoises by creating a robotic scope with video capability and temperature and humidity sensing.



Gopher tortoise burrow diagram



User Interface

- Raspberry Pi B+ microprocessor
- 7" IPS screen displays video feed and temperature and humidity data
- Gamepad allows for intuitive rover control, camera control, and data acquisition
- 32 GB SD card



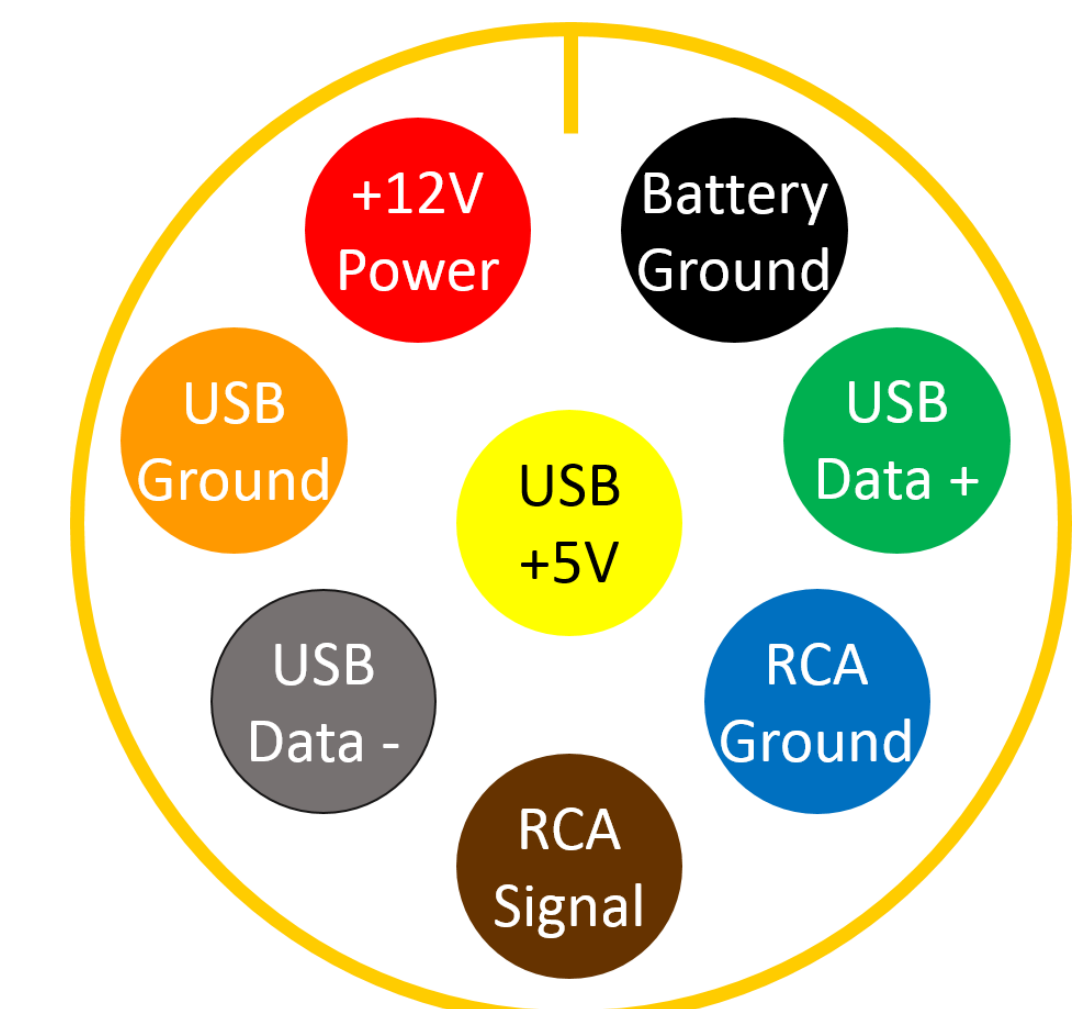
Monitor display.



Gamepad button mapping.

Tether

- 50ft Kevlar exterior sheath
- 8 pin waterproof connection



A cross-section of the 50 ft. tether.

Specifications

- Gopher burrows reach a maximum of 50ft
- Rover measures 2.5" by 6.5" by 11.0"
- Lithium-ion battery (five hours of continuous operation)
- User interface includes a gamepad controller and cased screen

Body Casing

- ABS and infrared-capable Plexiglas
- Angled front shield to mitigate glare
- Splash-proof with silicone sealant
- External side boxes contain the buck converter and the temperature and humidity sensor