

Towards a 4D Breast Phantom for Radiotherapy QA

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Motivation

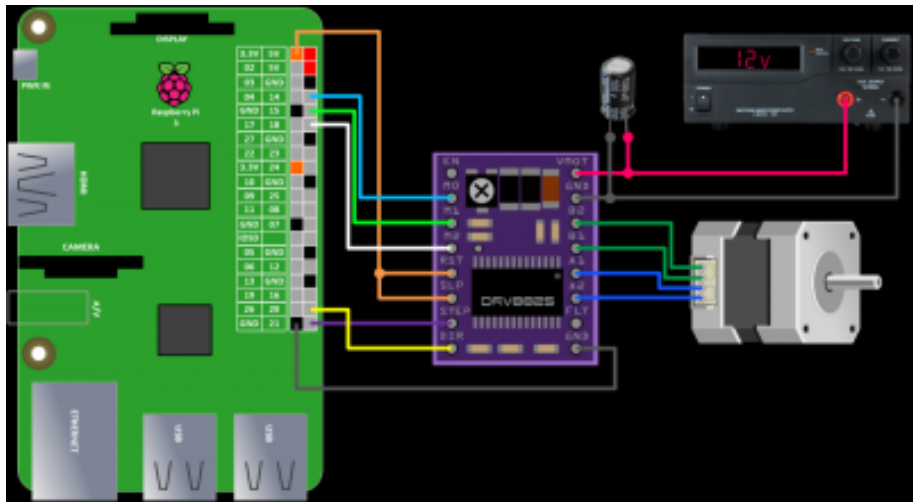
- Motion in imaging and treatment can pose an issue..
 - Breath hold/gated treatments
 - CyberKnife motion-tracking
 - Motion artifacts in IGRT
- Currently, only available QA phantom is by QUASAR
 - Very expensive
 - Not full 4D capabilities
- Desire for open-source alternative



Overview of Project

- Want to
 - Take in a breathing trace
 - Convert it into mechanical motion
- Needs to be
 - Standalone
 - “Perfect” temporal and spatial accuracy
 - Open-source and cheap
- How to?
 - Raspberry Pi → Stepper motor
 - Rotational motion → Linear motion

Circuitry



Motivation