

Stretch RE1 - Specification

General

Mechanical

- Weight: 23 Kg
- Height: 141 cm
- Footprint (Stowed): 34cm W x 33 cm L

Electrical

- Voltage: 12VDC
- Battery: Deep Cycle SLA
- Battery Capacity: 18 AH

Manipulator

Lift

- Range of motion: 110cm
- Force sensing via motor current
- Max speed: 0.2 m/s

Arm

- Range of motion: 52cm
- Force sensing via motor current
- Max speed 0.2 m/s

Payload: 1.5Kg (no gripper)

Developer

- 2x M4 mounting holes
- 1x Aruco Tags

End of Arm

Wrist Yaw

- Range of motion: 330 Deg

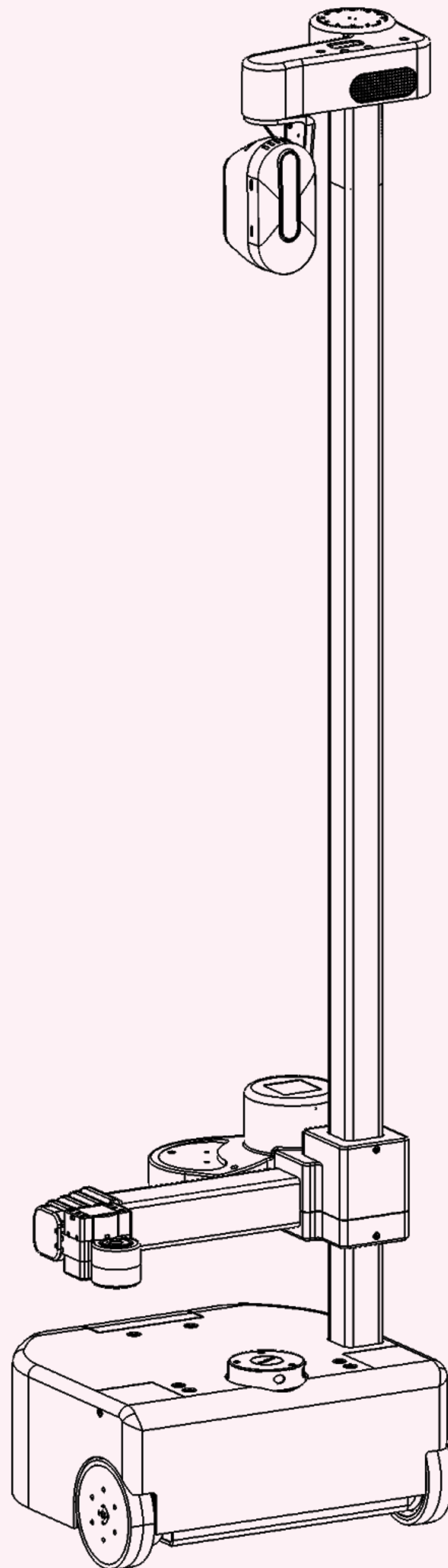
Accelerometer: 3DOF

Tool Plate

- Dynamixel X-Series bolt pattern
- Dynamixel X-Series TTL bus

Developer

- Arduino with 10-pin expansion header
 - 12V@500mA, SPI, I2C, DIO
- USB 2.0-A port
- 2x Aruco tags



Patents Pending

Head

Audio

- 4 channel ReSpeaker MicArray V2.0
- 8W stereo audio out
- Volume adjust

Runstop

- Start/stop illuminated button

Developer

- 2x M4 mounting holes
- USB 2.0-A port
- 12V@3A power port

Depth Camera

- Intel RealSense D435i with IMU

Camera DOF

- Pan range of motion: 225 deg
- Tilt range of motion: 115 deg

Base

IMU

- 9 DOF FXOS8700 + FXAS21002

Laser Range Finder

- Slamtex RPLidar A1
- FOV: 340 degrees

Drive

- Differential two wheel
- Position and velocity control
- Omni Wheel caster
- 25mm ground clearance
- Max speed: 0.6 m/s

Developer

- 2x Aruco tags
- 8x M4 mounting points
- 6x USB 2.0-A ports
- HDMI
- Ethernet
- Charge port
- On / Off switch

Compute

- Intel NUC-8
- CPU: Intel i5-8259U
- Ram: 16GB
- SSD: 500GB