

Summary Specification	
BIL. SEBUTHARGA/QUOTATION REF.:	UBD/Q/223/2023 (SDS) - [G]
TARIKH DIIKLANKAN :	<u>12 Sept 2023 [Selasa]</u>
TARIKH TUTUP :	<u>25 Sept 2023 [Selasa]</u>



TITLE : TO SUPPLY AND DELIVER STRETCH 2 RESEARCH EDITION MOBILE ROBOT MANIPULATOR (INCLUDING DEX WRIST AND GRIPPER FOR THE ROBOT) UNIVERSITI BRUNEI DARUSSALAM

No.	Quantity	SPECIFICATIONS
1	1 UNIT	Stretch 2 Robot Stretch 2 Research Edition Mobile Manipulator (including Dex Wrist and Gripper for Stretch 2) <u>Specification:</u> - Refer the attachment.

IMPORTANT

The Official PDF quotation/tender form will be send via email once UBD Official receipt issued and send to vendors/supplier for confirmation of payment received.

Mode of Payments > REFER IN UBD WEBSITE

Please take note that the document fee for each of the New and Extended quotations will be BND 10.00 each

Important Note: Please ensure that you provide the correct details when making the payment.

Please email proof of the above payment to helpdesk.epay@ubd.edu.bn , finance@ubd.edu.bn , eprocurement.support@ubd.edu.bn.

Stretch 2 Robot Specification

Stretch 2 Research Edition Mobile Manipulator (including Dex Wrist and Gripper for Stretch 2)

Quantity: 1 Unit

General Specification for Stretch 2

- Mechanical
 - Weight: 23 Kg
 - Height: 141 cm
 - Footprint: 34cm W x 33 cm L
- Electrical
 - Voltage: 12VDC
 - Battery: Deep Cycle SLA
 - Battery Capacity: 18 AH
 - Runtime: 2-5 hours (load dependent)

Manipulator

- Lift
 - Range of motion: 109cm
 - Force sensing via motor current
 - Max speed: 0.15 m/s
- Arm
 - Range of motion: 52cm
 - Force sensing via motor current
 - Payload 2.0Kg (no gripper)
 - Max speed: 0.3 m/s
- Developer
 - 2x M4 mounting holes
 - 1x Aruco Tags
 - USB 2.0-A port
 - 12V@3A power port



End of Arm

- Wrist Yaw: 330 Deg
- 3 DOF Accelerometer
- Tool Plate: M2 bolt pattern with thru bore
- Tool Control: Dynamixel X-Series TTL
- Developer
 - Arduino with 10-pin expansion header
 - 12V@500mA, SPI, I2C, DIO
 - USB 2.0-A port
 - 2x Aruco tags

Head

- Intel RealSense D435i with IMU
- Head pan: 346 deg ROM
- Head tilt: 115 deg ROM
- Illuminated runstop button
- Audio
 - 4 channel ReSpeaker MicArray V2.0
 - 8W stereo audio out w/volume adjust
- Developer
 - 3x M4 mounting holes
 - USB 2.0-A port
 - 12V@3A power port

Base

- Compute
 - Intel NUC-8
 - CPU: Intel i5-8259U
 - Ram: 32GB
 - SSD: 500GB
 - WiFi
 - Ubuntu 20.03 / ROS Noetic

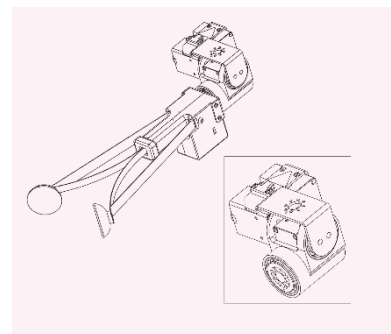
- IMU: 9 DOF FXOS8700 + FXAS21002
- Laser Range Finder
 - Slamtex RPLidar A1
 - FOV: 340 degrees
- Drive
 - Differential two wheel w/ Omni Wheel caster
 - Position & velocity control
 - 25mm ground clearance
 - Max speed: 0.3 m/s
- Developer
 - 2x Aruco tags
 - 6x M4 mounting points
 - 7x USB 3.0-A ports
 - HDMI / Ethernet
 - Auto-dock charge port
 - On / Off switch
 - Light bar voltage indicator
 - 12V@5A expansion power

Dex Wrist and Gripper for Stretch 2 Specification

Quantity: 1 Unit

Mechanical

- Weight w/ gripper: 695g
- Weight w/o gripper: 500g
- Overall dimensions w/ gripper
 - 8x9x28 cm
- Overall dimensions w/o gripper
 - 8x9x7 cm



Electrical

- Voltage: 12VDC
- Bus: Dynamixel Serial TTL

Wrist

Pitch

- Robotis [XM540-W270-T](#)
- Range of motion: +60/-90 deg
- Stall Torque: 10.6Nm
- Servo: XM540-W270

Roll

- Robotis [XM430-W350-T](#)
- Range of motion: +180/-180 deg
- Stall Torque: 4.1Nm
- Servo: XM430-W350

Attachment

- Compatible with Stretch RE1 end-of-arm
 - 8x M2 on 16mm bolt circle
- Roll tool plate
 - 8 x M2 on 20mm bolt circle

Included Stretch Compliant Gripper