

Athena 2.0 Pro

PRO Universal Robot Platform

Datasheet

- Suitable for small and medium-sized robot development
- Strong Adaptability
 - Widely Modifiable

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I. Introduction

Athena 2.0 PRO is an upgraded version of Athena 2.0. It is a compact, adaptive, and cost-effective robot platform that designed to meet the needs of small robot application development. It can be used in various commercial environments such as smart inspection robots, container delivery robots, and restaurant serving robots.

The platform is equipped with the newly upgraded high-performance SLAMCUBE2 autonomous navigation and localization system from SLAMTEC, enabling it to work in various commercial settings with different applications.

Multi-Floor movement and Simple deployment

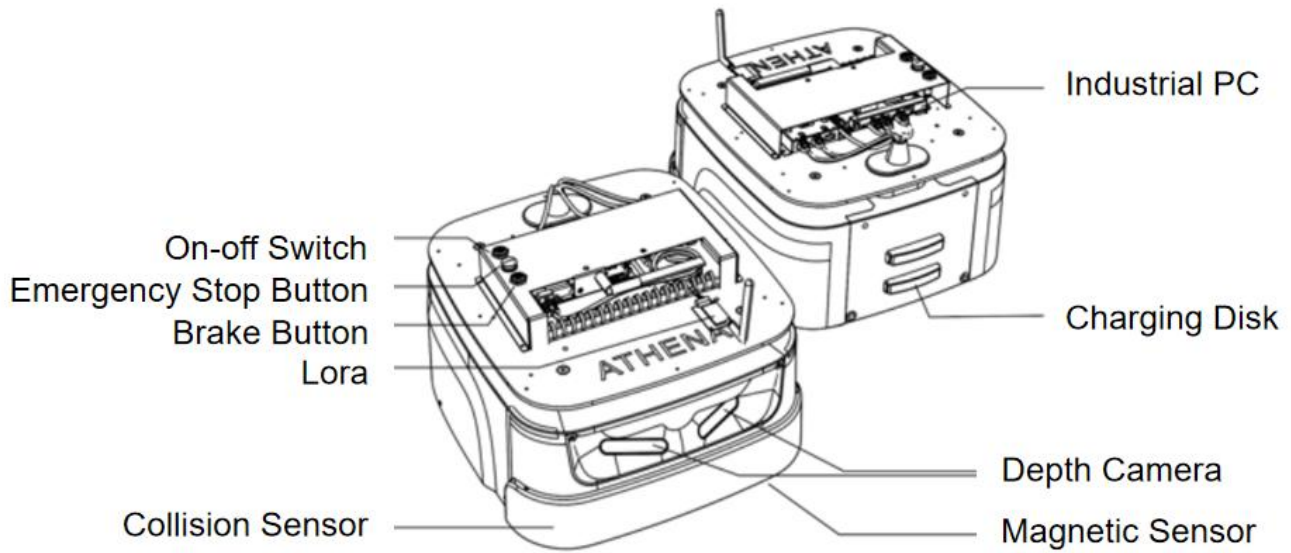
Athena2.0 PRO can be equipped with SLAMTEC's newly upgraded Intelligent Elevator Control System 4.0, which adapts to different elevator deployments from various brands, making it more versatile.

Athena2.0 PRO uses the latest upgraded version of SLAMTEC's RoboStudio 2.0 deployment software, which supports one-click merging of maps for multi-floor mapping. It enhances the mapping and deployment efficiency while streamlining the deployment process, resulting in easy and quick deployment.

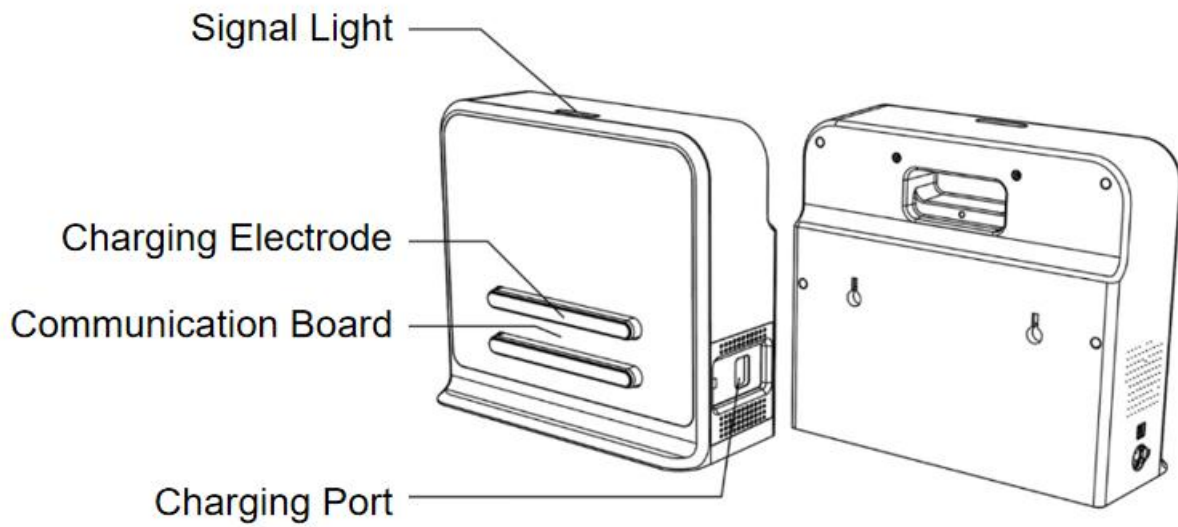
Multi-sensor data fusion

Athena2.0 PRO adopts multi-sensor fusion technology, including LiDAR sensor, magnetic sensor, depth camera, collision sensor, etc. This enables it to adapt freely to the complex and changing commercial environment, and successfully achieve autonomous mapping, localization, and navigation.

II. Exterior view



III. Charging Dock



Schematic diagram of charging dock

IV. List of products

Description	Quantity	Remark
Athena 2.0 PRO	1	Athena 2.0 PRO chassis body
Charging Dock	1	The environment needs to be selected before deployment

V. Product Parameters

Product Model		Athena 2.0 PRO		
Core Function		SLAMWARE™ Localization and Navigation		
Dimension and Weight		Length*Width	428*460mm	
		Height	232mm (w/o control board)	
		LiDAR Height (center)	211mm	
		Ground Clearance	28mm	
		Net Weight	22kg	
		Rec. Weight Capacity	40kg	
Sensor Performance Parameters		LiDAR Sensors	Model	RPLIDAR S2 (Dtof principle)
			Measuring Accuracy	Full scale $\pm 30\text{mm}$
			Maximum Scanning Radius	0.05-30m (90% reflectivity, white objects) 0.05-10m (10% reflectivity, black objects)
		Depth Camera Sensor	Quantity	2
			Detection Range	0.3m - 3.5m (varies with lighting conditions)
			Field of View (FOV)	H: $147\pm 3^\circ$; V: $51\pm 3^\circ$
		Magnetic Sensors	Quantity	2
			Maximum Detection Range	3.5cm

	Collision Sensors	Quantity	2
		Trigger Method	Physical Collision
		Trigger Distance	0.3~0.5cm
		Trigger Force	8N
Mapping Performance		Map Resolution	50mm
		Maximum Mapping Area (Single Build)	300m x 300m
		Maximum Operating Area	100,000 m ²
Movement Parameters		Maximum Travel Speed	1.2m/s
		Default Travel Speed	0.7m/s
		Maximum travel Speed during Mapping	0.6m/s
		Maximum Slope Angle	<p>10° Ramp</p> <p>The chassis has a maximum slope angle of 10°, and it can safely navigate slopes with a gradient of up to 18%. The overall height of the vehicle's center of gravity is within 180mm to safely handle slopes of up to 10°.</p> <p>(Note: A slope with a gradient of 100% refers to a 45° incline, where a height difference of 100m is covered over a distance of 100m.)</p>
Movement Parameters		Traverse Bump	20mm

		Height	
		Minimum Path Width (per wheel)	40mm
		Minimum Path Width (per chassis)	550mm
		Point-to-point Accuracy (AVG)	±40mm
		Point-to-point Accuracy (MAX)	±80m
		Minimum Point to Angle	±3.0°
		Multi-Robot Obstacle Avoidance	Supports up to 3 robots in the same scene
			LORA Module (standard)
Motor		Wheel Set	2 x 6.5-inch Hub Motors 4 x 2.5" Universal Wheels
User Interface	Hardware Interface	Power Input	DC 24V 10A
		HDMI	1 x HDMI
		Switch	1 x Brake Release, 1 x Emergency Stop (I/O), 1 x Power Switch
		Sound	1 x 3.5mm Headset Socket
			1 x LINE_MIC Audio Pin (Co-lay with Headset Socket)
			1 x Bi-channel 5w/8Ω Amplifier Speaker Pins
	Network Interface	Ethernet	1 x RJ45 Gigabit Ethernet Port
		Wi-Fi Band	2.4GHz
	Software Interface	SLAMWARE™	http protocol interface Can support different development

		languages and platforms, such as Windows/iOS/Android/Linux
Network	Wi-Fi	Authentication-free Network Environment
	4G	4G SIM for domestic and foreign carriers (paid customization on request)
Battery Life & Capacity	Capacity	18 AH 18650 Lithium-ion ternary battery cell (standard)
	Stationary State	>19H (no load, room temperature)
	No-load Running Time	>10H (no load, room temperature)
	Full Load Range	8H (40kg, room temperature)
	Charging Time	4-5 h (standard charging dock)
	Battery life	800 charge/discharge cycles down to 60% of initial capacity
Power Consumption	Standby Power Consumption	17W (no load)
	Full Load Power Consumption (Rec. load 40 kg)	40W (moving)
	Maximum Power Consumption with External Loads	240W
Noise	Noise Level	≤60db
Operating Environment	Operating Temperature	0°C ~ 40°C
	Transportation & Storage Conditions	-25-+55°C
	Operating Humidity	20 ~ 90%rh

	Operating Altitude	≤2000m
Certification	CR	

Charging Dock	
Overall Dimensions	W360mm*D150mm*H320mm
Color	White
Rated Input	100-240V 50/60Hz 3A MAX
Rated output	DC 25.5V 6A