Athena 2.0
PRO MAX Universal Robot Platform

Specification

o Suitable for small and medium sized robot development

o Strong Adaptability

o Widely Modifiable

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I. Introduction

Athena2.0 PRO MAX is a compact, adaptive, and cost-effective robot platform developed by SLAMTEC, designed to meet the needs of small robot application development. It can be used in various commercial environments such as intelligent inspection robots, container delivery robots, and restaurant serving robots.

It is equipped with SLAMTEC's newly upgraded high-performance SLAMCUBE2 autonomous navigation and localization system, which enables it to work in various commercial settings with different applications.
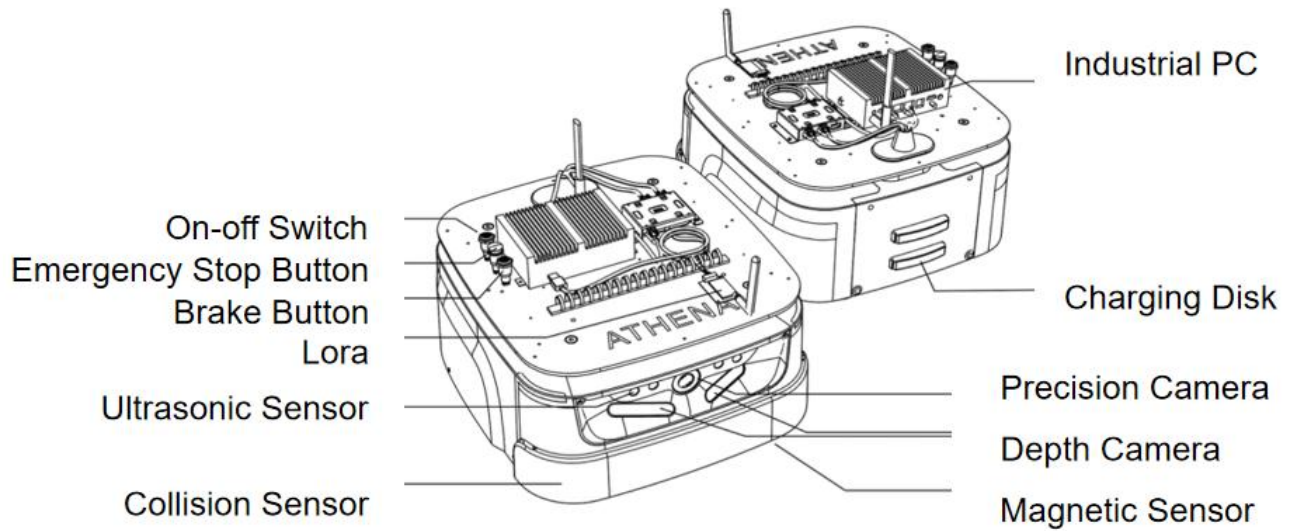
Multi-Floor movement and Simple deployment

Athena 2.0 PRO MAX is 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 MAX 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.
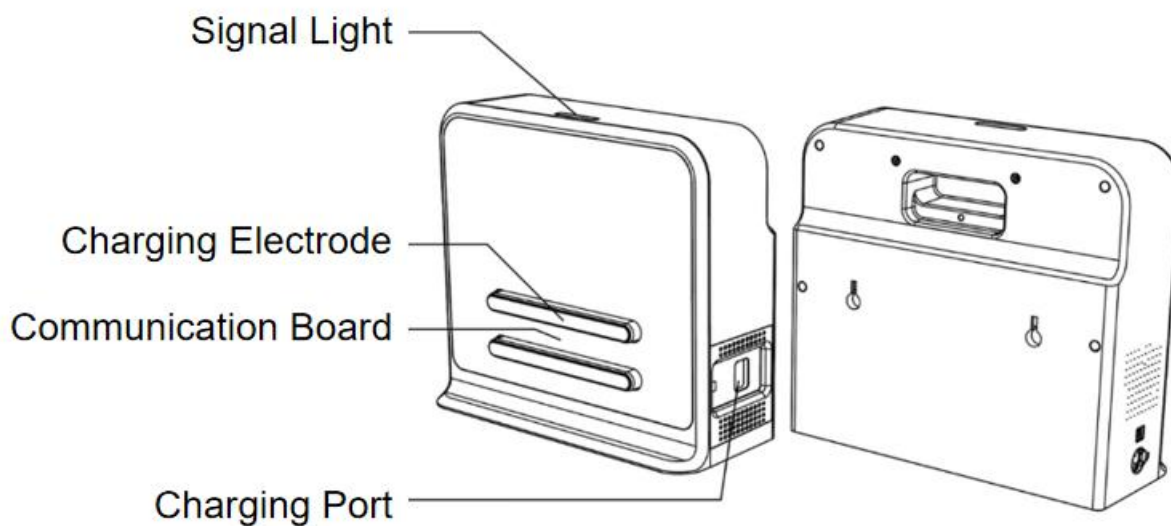
Multi-sensor data fusion

Athena2.0 PRO MAX adopts multi-sensor fusion technology, including LiDAR sensor, magnetic sensor, depth camera, collision sensor, ultrasonic 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

On-off Switch
Emergency Stop Button
Brake Button
Lora
Ultrasonic Sensor

Collision Sensor

Industrial PC

Charging Disk

Precision Camera
Depth Camera
Magnetic Sensor

III. Charging Dock

Signal Light

Charging Electrode

Communication Board

Charging Port

Schematic diagram of charging dock

IV. List of products

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

V. Product parameters

Product Model	SLAMWARE™ Localization and Navigation		
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	Precision Camera (to identify the QR codes)	Docking Accuracy	±1.5cm
		Angle	±1.0°
	Ultrasonic Sensors	Quantity	2
	LiDAR Sensor	Model	RPLIDAR S2 (Dtof principle)
		Maximum Scanning Radius	0.05-30m (90% reflectivity, white objects) 0.05-10m (10% reflectivity, black objects)
		Ranging Accuracy	Full scale ±3cm
	Depth Camera Sensor	Quantity	Standard 2
		Detection Range	0.3m - 2m (varies with lighting conditions)
		Field of View	H:147±3°; V:51±3°

		(FOV)	
	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	15mm
		Maximum Mapping Area (Single Build)	500m x 500m (50mm map resolution) 350 x 350m (15mm map resolution)
		Maximum Operating Area	250,000 ㎡
Movement Parameters		Maximum Travel Speed	1.2m/s (1.5m/s can be customized)
		Default Travel Speed	0.7m/s
		Maximum Travel Speed while Mapping	0.6m/s

Movement Parameters	Maximum Slope Angle	10° Ramp 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°. (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.)
	Traverse Bump Height	20mm
	Minimum Path Width (per wheel)	40mm
	Minimum Path Width (per chassis)	550mm
	Point-to-point Accuracy (AVG)	±20mm (15mm map resolution)
	Point-to-point Accuracy (MAX)	±40mm (15mm map resolution)
	Minimum Point to Angle	±1.0°
	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	2.4G/5GHz
	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 cell (standard)
		Stationary State	>19H (no load, room temperature)
		No-load Running Time	>10H (no load, room temperature)
		Full Load Range	8H (40kg, room environment)
		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	33W (no load)
	Full Load Power Consumption (Rec. load 40 kg)	56W (moving)
	Maximum Power Consumption with External Loads	240W
Noise	Noise Level	≤60db
Operating Environment	Operating Temperature	0℃～40℃
	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 10A