SARCOS® | ROBOTICS

Setting the standard for robotic systems that augment human performance to improve safety and enhance efficiency in unstructured environments.

GUARDIAN®S

The Guardian S remote visual inspection robot is a robust, multi-purpose, man-portable mobile IoT platform that carries multiple sensor payloads, providing real-time information while keeping the human operator out of harm's way. Optimized for unstructured and unpredictable environments, the Guardian S robot is designed specifically to navigate uneven, challenging terrain and to access small, confined spaces. With the capability for safe teleoperation from remote locations, the Guardian S robot goes where humans either can't or shouldn't go.

GUARDIAN® S

Ideally suited for commercial, industrial, public safety, and defense applications, the Guardian S robot delivers extended run times and long-range wireless operations, making inspections and remote surveillance safer and more effective than ever before.

Multi-purpose, man-portable mobile IoT platform

Built-in sensor module gathers real-time information

Able to transport 10-pound (4.55 kg) sensor payload while traversing a horizontal surface

Flexibility to add task-specific sensors via its payload bracket

Two-way, real-time video, voice, and data communication

Built-in, enhanced Wi-Fi and radio connection between the operator control unit (OCU) and robot

Built-in LTE (at 700 MHz operation) for future cloud-based services

Two-way audio between OCU and robot (half-duplex PTT)

Audio and video encrypted using 256-bit AES encryption

All-terrain, state-of-the-art visual surveillance

Teleoperates and traverses challenging terrain: stairs, pipes, tanks, culverts, and vertical ferromagnetic surfaces

Slim form factor enables access to confined spaces –7" (17.8 cm) diameter openings)

Up to 12 hours of surveillance time or a ~3-mile (~4.8 km) travel range

High-resolution visual inspection enabled by six 4k cameras with digital zoom and autofocus

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The Guardian S robot implements optional cloud computing functionality through the Sarcos® Command Center. It incorporates all aspects of robot control, data gathering and analysis in an easy-to-use cloud-based platform.

❯ Asset management
Trace, track and understand robot location and health

❯ Authorization and Authentication
Authorizes access to robotic control or sensor data

❯ Mission Management and Review
Set-up, execution and post-operation review of the sequences of missions and operations

❯ Data Collection and Storage
Managed collection and storage

❯ Data Analysis
Easy-to-use tools for analyzing collected data

The Guardian S robot supports a variety of industries, including public safety (SWAT, EOD, HAZMAT, fire, disaster recovery), mining, oil & gas, infrastructure inspections, maritime, power generation, petrochemical and more.

Specifications

	Guardian S	Guardian S Magnetic	Operator Control Unit
Dimensions			
Snake mode	52 in L x 4.7 in W x 5.2 in H (132.1 cm L x 12 cm W x 13.2 cm H)		8.2 in L x 16.5 in W x 3.25 in H (20.9 cm L x 42 cm W x 8.3 cm H)
Tank mode	21.7 in L x 17.4 in W x 5.2 in H (55.1 cm L x 44.2 cm W x 13.2 cm H)		
Weight (w/o external radio)	˜17 lb (˜7.7 kg)	˜18 lb (˜8.2 kg)	8 lb (3.7 kg)
Touchscreen	–	–	10 in.
Max Speed (unloaded)	1.4 mph (2.25 kph)	0.6 mph (.97 kph)	–
Max Payload			
Horizontal Surface	10 lb (4.55 kg)	10 lb (4.55kg)	–
Vertical Surface	–	5 lb (2.27 kg)	
Operating Temperature	-4 to 140 ºF (-20 to 60 ºC)		41 to 95 ºF (5 to 35 ºC)
Ingress Protection	IP65		IP62
Battery Usage	3 Lithium-ion (user swappable)		1 Lithium-ion (hot swappable; 2 batteries provided)
Rated Voltage	14.4 V		14.4 V
Total Energy Capacity	147 Wh		98 Wh
Charging Times	˜3 hrs		˜3 hrs
I/O	One USB2 (power only)		One USB2
Communications	Wireless: Wi-Fi IEEE 802.11ac		
	Options: RF Module (multiple ISM bands: 915 MHz, 2.4 GHz, 4.9 GHz and 5.75 GHz LTE)		
Built-in Sensors*	Variable LED illumination, normal visual range 360° cameras, navigation camera, GPS, Inertial Measurement Unit (IMU), and optional Infrared		–
	*Guardian S robot can support/carry third-party sensors via optional payload platform with tripod mount adapter		
Video	(6) 4k color cameras with digital zoom		–
	Options: FLIR hi-res camera		
Audio	Built-in microphone and speaker to enable two-way audio between the OCU and robot (half-duplex PTT)		
Accessories	Two-bay battery charger		–
	Options: Payload platform with tripod mount adapter, safety tether, Picatinny rail, six-bay battery charger, hard and soft carrying cases		

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