Spot®

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Government & Public Safety Kit

Boston Dynamics

GOVERNMENT & PUBLIC SAFETY

Spot helps reduce risk in potentially dangerous scenarios, enabling first responders to safely assess and de-escalate tense or hazardous situations.

Agile

Spot's athletic intelligence makes it easier to operate than tracked and wheeled robots. Within moments, operators can quickly drive Spot up and down stairs, over unstructured terrain, and more.
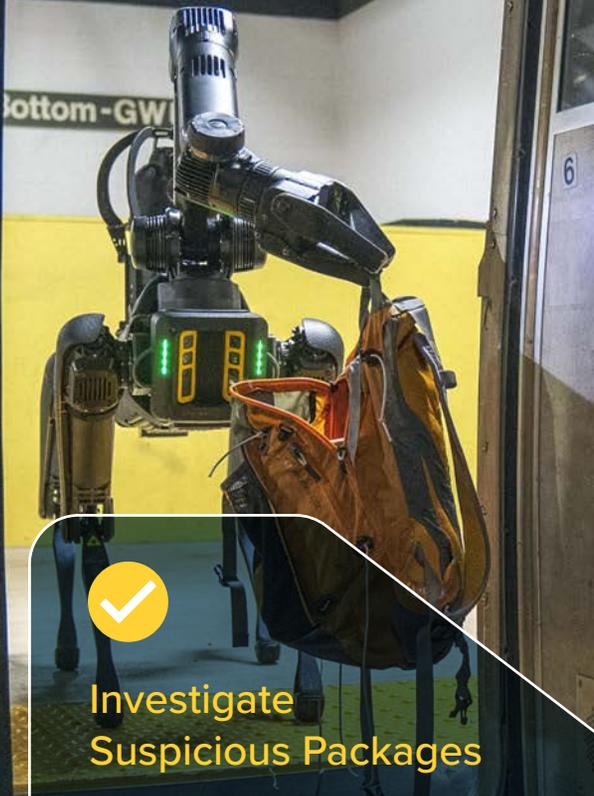
Dextrous

With Spot Arm, operators can pick up objects and open doors with ease. Issuing high level commands via tablet actions, users can be up and running with very little training.
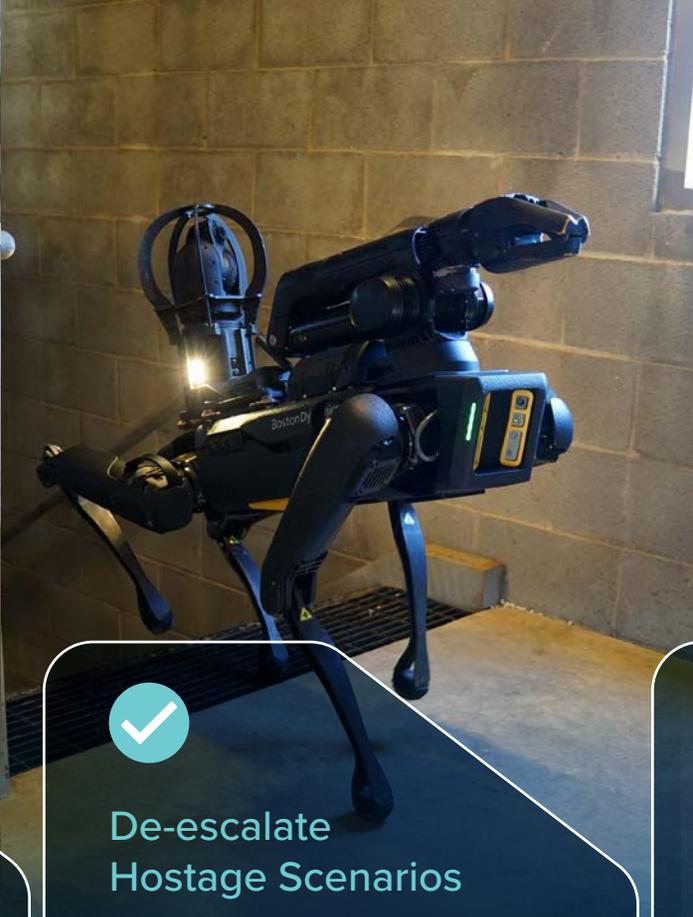
Customizable

In addition to the payloads included in this bundle, our network of partners have created an ecosystem of enhanced capabilities for Spot, including a variety of mission-applicable chemical, biological, and radiological sensors.
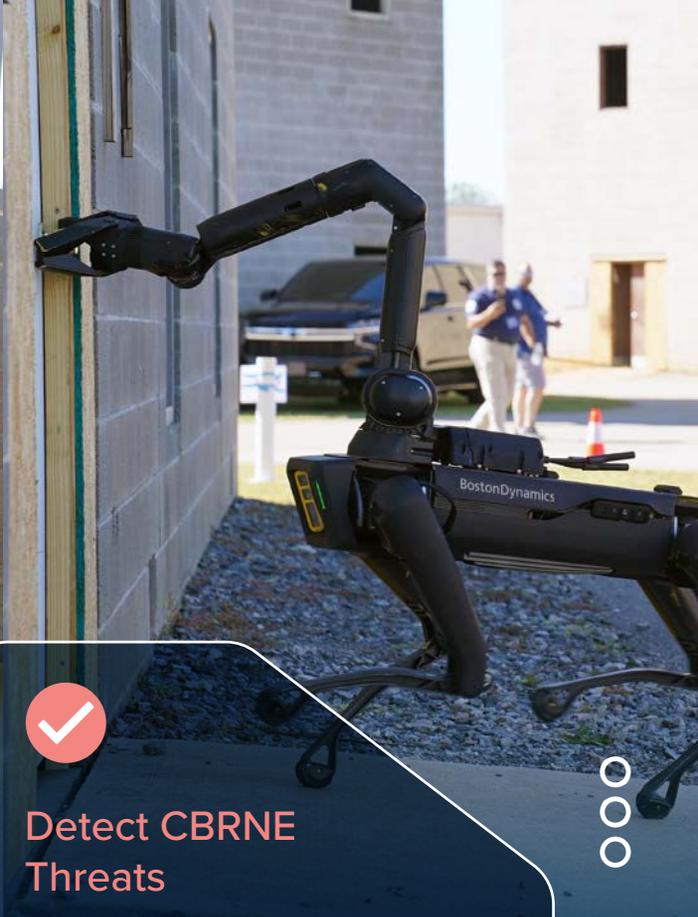
Investigate Suspicious Packages

Investigate suspicious packages and suspected explosives with Spot while maintaining a safe perimeter. Integrate sensors to measure oxygen levels of potentially explosive environments or detect explosive materials. Equipped with cameras, x-ray devices, and the Spot Arm, Spot enables Explosive Ordnance Disposal (EOD) technicians to safely inspect and render safe suspicious packages.

De-escalate Hostage Scenarios

Spot can gather valuable information to support response teams and facilitate remote negotiations, reducing risk to first responders and the public. In active shooter or hostage situations, Spot can help first responders establish visual and two-way communications, so they can gather the information needed to de-escalate the situation and keep officers and bystanders out of harm's way.

Detect CBRNE Threats

Deploy Spot with specialized sensors to detect radiological and nuclear material, toxic gases, and other dangerous chemical or biological hazards. Spot helps field operators identify and assess Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) threats from a safe stand-off distance, traversing unpredictable terrain and collecting data about the risk.

SPOT® THE AGILE, MOBILE ROBOT

SPOT ROBOT

PERSISTENT SYSTEMS
RADIO KIT

SPOT ARM

SPOT CAM+IR

SPOT CARE

SPOT ARM

Equipped to operate through both semi-autonomous actions and telemanipulation, the arm will open doors, pick, place, push, or drag objects, and adapt to new situations at the push of a button or swipe of a screen.

Features:

- 6 degrees of freedom plus a gripper
- Semi-automated manipulation options
- Carries up to 11kg (24 lbs)

SPOT CAM+IR

The Spot CAM+IR payload turns Spot into a powerful inspection tool with purpose-built cameras. 30x optical zoom allows you to see details at a distance, and an integrated thermal camera helps to detect hot spots and more in low light situations.

Features:

- Integrated radiometric thermal camera
- Spherical camera (360 x 170" view)
- Pan-tilt-zoom (PTZ) camera with 30x optical zoom

PERSISTENT SYSTEMS RADIO KIT

The Persistent Systems MPU5 Radio Kit enables point to point communications between Spot and its operator, so you can deploy Spot quickly and easily through a secure network with no infrastructure required.

Features:

- Creates a powerful, secure network anywhere
- Able to mesh if a wider network is needed
- Radios support 2.4 GHz

SPOT CARE

One year of premium service and support to keep your robot up and running at peak performance.

Features:

- Free damage protection*
- Part replacement
- Quick repair turnaround

*Improper use of Spot is not covered under Spot CARE. See our Spot CARE Terms and Conditions to see what constitutes improper use.

THE SPOT® ROBOT SPECIFICATIONS

Government & Public Safety Kit

DIMENSIONS WITH PAYLOADS

Length
1100 mm (43.3 in)

Width
500 mm (19.7 in)

Height (Sitting)
618 mm (24.3 in)

Default Height
(Walking)
1037 mm (40.8 in)

Max Height (Walking)
1127 mm (44.4 in)

Min Height (Walking)
947 mm (37.3 in)

Net Mass/Weight
(including battery)
50.5 kg (111.3 lbs)

LOCOMOTION

Max Speed
1.6 m/s

Max Slope
±30°

Max Step Height
300 mm (11.8 in)

TERRAIN SENSING

Horizontal Field of View
360°

Range
4 m (13 ft)

Lighting
> 2 Lux

Collision avoidance
maintains set distance from stationary obstacles

CONNECTIVITY

WiFi
2.4GHz / 5GHz b/g/n Ethernet

ENVIRONMENT

Ingress Protection
IP54

Operating Temp.
-20°C to 45°C

BATTERY

Battery Capacity
564 Wh

Average Runtime
90 mins

Standby Time
180 mins

BATTERY (continued)

Recharge Time
60 mins

Length
324 mm (12.8 in)

Width
168 mm (6.6 in)

Height
93 mm (3.7 in)

Mass/Weight
5.2 kg (11.5 lbs)

CHARGER

Input Voltage
100-240VAC, 50/60Hz 8A Max

Output
35-58.2 VDC, 12A Max

Length
380 mm (15.0 in)

Width
315 mm (12.4 in)

Height
178 mm (7.0 in)

Mass/Weight
7.5 kg (16.5 lbs)

Operating Temp.
0°C to 45°C

TABLET WITH JOYSTICKS

Height
138 mm (5.4 in)

Width
286 mm (11.3 in)

Depth
56 mm (2.2 in)

Weight
546 g (1.2 lbs)

Touch Screen Size
8" diagonal

Interface Controls
2x Joysticks, 2x 5-direction buttons, and 2x bumper buttons

Resolution
1920x1200

Battery Life
Up to 5 hours

Ingress Protection
Rain and dust resistant

SAFETY AND COMPLIANCE, UNITED STATES

Designed according to ISO 12100 for risk assessment and reduction methodology and IEC 60204-1 for electrical safety. See Information for Use for further details on intended uses.

EMC: FCC Part 15B Radio equipment: Incorporates a FCC Part 68 Certified radio system

Laser product
Class 1 eye-safe per IEC 60825-1:2007 & 2014

SPOT ARM

Degrees of Freedom
6 + gripper

Length (at full extension)
984 mm (38.7 in)

Max. Endpoint Speed
10 m/s

Max. Lift Capacity**
Up to 11 kg (24.3 lbs)

Continuous Lift Capacity**
(at 0.5 m extension)
5 kg (11 lbs)

Max. Drag Capacity**
(on carpet)
Up to 25 kg (55.1 lbs)

Max. Reach Height
1800 mm (70.9 in)

GRIPPER

Depth
90 mm (3.5 in)

Max Aperture
175 mm (6.9 in)

Peak Clamp Force
(at tip of opening)
130 N

Integrated Sensors
Accessory Port, ToF, IMU, 4K RGB, Gigabit Ethernet, 50W power, camera sync (PPS)

**Payload capacities measured at 22°C

SPOT CAM+IR

360° CAMERA

Field of View (FoV)
360 x 170°

Video Frame Rate
Variable*

Video Storage
No

Video Streaming
Yes

Resolution
10 MP

File Size
31.1 MB

Still Image Format
PPM (Portable Pixel Map)

PTZ CAMERA

Resolution
2MP, 1080p video

Optical Zoom
30x

Pointing Accuracy
2 degrees

Range of Motion
170°/sec

Tilt Range
-30 to 270°

IR CAMERA

Scene Temp. Range
(High Gain)
-40°C to +160°C

(Low Gain)
-40°C to +550°C

Video Speed
7.5 Hz

FoV
69 x 56°

Image Resolution
640 x 512

Accuracy
Radiometric ±5°C

PERSISTENT SYSTEMS RADIO KIT

OPERATOR RADIO

Length
(with antennas and battery)
390 mm (15.4 in)

Length (without antennas and battery)
140 mm (5.5 in)

Width
70 mm (2.8 in)

Depth
40 mm (1.6 in)

Total Mass/Weight
(with antennas and battery)
1.1 kg (2.4 lbs)

Mounting
Belt clip

RADIO TRANSMISSION DETAILS

Model
Persistent Systems MPU5 RF-2150

Frequency Range
2412 - 2462 MHz

RF Modulation
OFDM (64QAM, 16QAM, QPSK, BPSK)

Antenna Chains
3 Independent RF Chains

TX/RX Operating Modes
All MIMO modes from SISO to 3x3

Channel Bandwidth
5, 10, and 20 MHz

Peak TCP Throughput
150 Mbps at 20 MHz Channel

Configured Transmit Power
.955W

ENVIRONMENT

IP Rating
IP68

Storage Temperature
-40°C to 70°C

Operating Temperature
-20°C to 45°C

GET STARTED WITH SPOT TODAY.

Contact our sales team to learn more about how you can implement the robot on your team: www.bostondynamics.com/spot-sales

Visit our website at:
www.bostondynamics.com

Boston Dynamics