

- Safely detect and inspect hazardous materials...
- Identify dangerous chemicals, radiation and other potentially-lethal toxins...
- Keep personnel and civilians at safe stand-off distances...

*The iRobot® PackBot® 510 with HazMat Kit provides increased situational awareness in areas compromised by dangerous agents, gas leaks, chemical exposure and other hazardous materials.*



### Comprehensive hazardous materials detection

**iRobot® PackBot® 510 with HazMat Kit performs multiple missions, detecting and identifying dangerous chemical, radiological and organic compounds and other hazards:**

#### HazMat Detection

Detect toxic chemicals, materials, warfare agents and radiation.

#### Surveillance / Reconnaissance

Evaluate danger zones and inaccessible areas, including urban settings, with real-time video, audio and sensor readings.

#### Route Clearance

Sweep for IEDs and other threats on roads, mission routes and troop routes.

#### Bomb Disposal / EOD (IEDs / VBIEDs / UXOs)

Neutralize roadside bombs, car bombs and other IEDs, as well as unexploded ordnance.

#### HazMat Detection Capabilities

- Chemical Warfare Agents
- Gamma Radiation
- Explosive Gases and Vapors
- Toxic Industrial Chemicals (TICs)
- Toxic Industrial Materials (TIMs)
- Blood and Blister Agents
- Volatile Organic Compounds
- Temperature / Humidity

## HazMat Sensors

Multiple integrated sensors provide TIC, TIM, Blood Blister, VOC, Radiological and Temperature/Humidity detection and reporting.

## Vision and Targeting Head

Equipped with powerful cameras, the vision and targeting head ensures that the operator can see and overcome anything in the robot's path. The included QuickClamp Accessory Mount allows for fast installation and removal of a variety of tools at the head.

## Manipulator 1.0

A more powerful 80" (208.2 cm) manipulator doubles lifting, carrying and manipulation capacity. The base rotates 360° to allow for precise targeting and placement of disrupters.

## Stronger Manipulator Joints

Strengthened elbow joints enable the robot to lift up to 30 lbs (13.6 kg) with the arm in a compact position or 10 lbs (4.5 kg) while fully extended.

## Surveillance Camera

Continuous pan and 220-degree tilt, color CCD with 312x zoom, auto-focus, image stabilization and low-light capabilities.

## Color Cameras

Two arm cameras provide enhanced views and operation. One camera points at the head, allowing for maneuvering in tight situations. The second camera points at the gripper on the manipulator, enabling easier handling of objects.

## Drive Camera

Wide-angle, mounted on base of unit with multiple positions allowing for forward, rear and downward views. It can also view manipulator positions.

## Lights

Variable-intensity LED provide both white and IR LED arrays for illumination in all ambient light conditions.



## iRobot PackBot 510 with HazMat Kit Contents

- PackBot 510 chassis
- Rugged 15" laptop OCU (Amrel)
- 2.4GHz radio
- Manipulator 1.0 w/ 2 way audio comms
- Quickclamp w/ fireset and aux port
- Dismounted firing circuit
- 2 hand controllers
- Headphone w/ microphone
- 4 BB-2590 U batteries and battery charger
- 2 BB-2590 battery cradles
- MultiRAE sensor kit
  - Calibration accessories
  - Extra filter packs
- LCD sensor kit
  - Confidence tester
  - Battery cassette
  - Sieve packs
- Radiac sensor kit
- Dual accessory port payload adaptor
- Rugged, sealed hard case
- Users manual & user documentation
- Aware® 2.0 license

## PackBot 510 Chassis Specifications

- Microelectronics & sensors
- Speed: Up to 5.8 mph (9.3 kmh)
- On-board computer with overheat protection, compass, accelerometers, inclinometer
- Height:
  - 16" (41 cm) with manipulator in stowed position
  - 87" (221 cm) with manipulator fully extended'
- Width:
  - 16" (41 cm) with quickflip flippers off
  - 20.5" (52 cm) with flippers on
- Length:
  - 32" (81 cm) with flippers stowed
  - 40" (102 cm) with flippers extended
- Weight:
  - Approx. 68 lbs (32 kg), including
  - 2 BB-2590/U batteries

## Total Capacity:

- Eight payload bays
- Carries up to 46 lbs (20.9 kg)

## Communications:

- RF: Fully digital 2.4 or 4.9 GHz; (up to 3,280' / 1000 m range\* line of sight)
- Optional 2.4 or 4.9 GHz radio and long range antenna
- Fiber spooler
  - \*Configuration dependent

## Manipulator Specification

- Extension: 80" (203.2 cm)
- Lifting capacity:
  - 10 lbs (4.5 kg) at full extension
  - 30 lbs (13.6 kg) at close-in position
- Degrees of Freedom (DoF):
  - 8 independent DoF
  - Shoulder rotation: Continuous
  - Shoulder pivot: 220°
  - Elbow 1: 340°
  - Elbow 2: 340°
  - Gripper rotation: Continuous
  - Gripper open: 180°
  - Head rotation: Continuous
  - Head tilt: 220°

## Battery Endurance:

- 4 BB-2590/U (Lithium Ion) batteries
- 8+ hours, depending on mission profile
- Up to 6+ miles (9.6 km) of travel

## OCU Specifications and Capabilities

The ruggedized, lightweight 15" OCU provides pre-set manipulator positions and 3-D active robot on-screen display, enabling the operator to easily position and visualize the robot

- Size: 13.5" (35.1 cm) W x 11.6" (29.4 cm) L x 3.1" (7.8 cm) H
- Weight: Approximately 14 lbs (6 kg)
- Environmental: All weather operation
- Screen: 15.1" (38.4 cm) XGA (1024 x 768) anti-reflective TFT LCD

## Power

- Removable 11.1V/660mAh lithium-ion battery
- AC Adaptor 90V~240V 50/60Hz input. Complies with military power source AC 115V 400Hz

## Software

- Aware® 2.0
- Multi-image display with full-screen option
- Multiple pre-set manipulator positions
- Auxiliary USB, ethernet, video output
- Two-way audio communications
- Power-saving sleep mode
- 3-D active model of vehicle
- Image capture capability to USB stick
- Gauge display of batteries
- Gauge display of fiber
- Three (3) speed ranges
- Multi-lingual



*This literature has been compiled for worldwide circulation. While general information, pictures and descriptions are provided, some illustrations and text may include product options and accessories NOT AVAILABLE in all regions. iRobot reserves the right to change specifications, design and price of the products described in this literature without notice. These items are on the USML and require Department of State export license.*

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