

# HD2-S MASTIFF

## Heavy Multi-Axis Arm Robot



## TACTICAL SUPPORT

The Mastiff Tactical Surveillance Robot is our heavy duty tactical solution. It is built durable, dependable, and ready to take on any situation.

Qualified by a series of NIST tests, the Mastiff can be deployed by in hazardous environments, navigate rough terrain, and ascend stairways.

## OVERVIEW

### APPLICATIONS

#### REMOTE ARM MANIPULATION

The multi-axis arm makes this robot a versatile tool for clearing rooms, removing suspicious packages, and remote surveillance. The ability to handle heavier payloads improves the performance of this robot.

#### EXPLOSIVE ORDNANCE DISPOSAL & HAZMAT

Our UGV (Unmanned Ground Vehicle) is an essential Explosive Ordnance Disposal (EOD) tool to keep people out of harm's way. You can equip the multi-axis arm with a Carbon Fire 10 Disruptor. MultiRAE sensors allow for detection of gas, radiation, and other potential hazards.

#### STAIR CLIMBING

Capable of climbing household stairs and obstacles. For more aggressive terrain and steeper stairs, the HD2-S includes rear stabilizer bars, which are used as a stabilizer to prevent roll over on steep pitches.

#### REMOTE SURVEILLANCE

The 30X zoom tilt camera at the base of the HD2 enables the user to view from a safe distance even in low light. The additional arm mounted camera provides the perfect angle for operating the robot's gripper.

#### REMOTE ROOM CLEARING

With the Multi-axis arm, things like doors will no longer stop you from surveying potentially dangerous locations.



Speed	110 ft/min
Runtime	Up to 8 hours
Weight	140lbs
Length	39 inches
Length (with stabilizer arms)	48 inches
Width	22 inches
Height (arm stowed)	25 inches
Ground Clearance	2.5 inches

SPECIFICATIONS

Enclosed Weather Resistant Chassis

Durable aluminum chassis with a rugged outer coating.

Multi-Axis Manipulator Arm

This multi-axis arm system allows for the robot to interact with it's environment. Improved payload capacity allows for the robot to transport or manipulate heavier objects.

Lithium Iron Phosphate (LiFePO) Battery

The batteries are high-energy density, lightweight, long-lasting, and safe. Easy to remove and replace if needed.

- Two (2) 25.6V 9.6Ahr LiFePO batteries power the main robot.
- One (1) 11.1V 10Ahr Li-Ion battery for internal robot controls.

Battery Charging

The smart chargers charge all batteries simultaneously with a single 115V AC plug (230V AC available on request).

Camera System

Strategically placed cameras for ease of use and effective surveillance. All cameras work in low light using either IR or LED lights.

- 360° pan/tilt IR camera with 20x zoom and LED lights.
- IR camera attached to gripper arm.
- Fixed front IR camera.
- Rear/view backup IR camera.

Operator Control Unit (OCU)

Designed for long range transmission, the 2.4GHz high power digital radio system provides secure two-way encrypted transmission between the control system and the robot. Additional OCU features include:

- Rugged Pelican case enclosure with 12" LCD touch screen.
- 11.1V 10Ah Lithium-Ion battery system.
- Integrated joysticks with intuitive controls for drive, stabilizer arm, manipulator arm, and camera.
- Preset arm positions for multi-axis arm to allow for easier operation and stowing.
- Kinematic model: 3D model with live positioning of the multi-axis arm. Additional collision detection.
- Record video and take snapshots.
- 2-way audio system for hostage negotiation.
- Quad view display of camera views.
- Additional control modes - Cartesian and Joint mode allow for intuitive manipulator control.

Unlimited Technical Support

Training Video and PDF Operation Manual

MULTI-AXIS ARM

	4-Axis	6-Axis
Rotating Base	✗	400 Degree
Shoulder	180 Degree	180 Degree
Elbow	270 Degree	270 Degree
Wrist Rotation	360 Degree	360 Degree
Wrist Tilt	✗	160 Degree
Parallel Finger (Opening)	4.5in	4.5in
Parallel Finger (Grip Strength)	65lb	65lb
Vertical Reach	69in	69in
Horizontal Reach	35in	35in
Arm Payload (Fully Extended)	25lb	25lb

ADDITIONAL OPTIONS

Repeaters & Monitoring Stations

Repeaters and monitoring stations significantly increase the operational range and can assist second entry teams.

Removable Rear Stabilizer Bars

A removable actuated stabilizer bars. Provides additional support for stairs and inclines to prevent roll overs.

HAZMAT Sensors

MultiRAE gas sensors for checking atmospheric content, radiation levels, and more.

Additional Camera Systems

We can supply thermal imaging, full HD systems, and additional camera systems.

Backup Battery System

Additional 24V 19.2Ah battery system & 11.1V 10Ah control battery system.

Carbon Fire 10 Disruptor Kit

Complete Carbon Fire 10 Disruptor kit with CFI Initiator for direct mounting to multi-axis arm. For EOD capable/qualified departments.

Multi-Axis Arm Attachments

- Window piercing tool
- Hook/Object puller
- Wire cutter

Removable Release Hitch

Remotely operated release hitch can be added to tow stop strips, cables, and more. Allows for easy deliver and drop.

Transport Case

Reusable foam lined transportation case to protect your robot in storage and transit.

HDMI Out

Display video feed on an external monitor via HDMI.

Additional Customization

We are prepared to incorporate features not listed on our datasheet, such as thermal imaging and button guards. Pricing will vary based on additional features requested.



## CONFIGURATIONS



**BASIC**



**STANDARD**



**ADVANCED**

### Main Chassis

Enclosed Weather Resistant Chassis	✓	✓	✓
LiFePO Battery System	✓	✓	✓
Rear Flipper/Stabilizer	✗	✗	✓
Multi-Axis Arm	4-Axis	6-Axis	6-Axis
Operator Control Unit (OCU)	✓	✓	✓
Ethernet Jack	✗	✗	✓
Carbon Fire Disruptor Mount	✗	✗	✓
Transport Case	✗	✗	✓

### Camera System

360° 20x Zoom IR Camera	✓	✓	✓
Gripper Arm IR Camera	✗	✓	✓
Front Nose IR Camera	✗	✗	✓
Rear view IR Camera	✗	✗	✓

### Operator Control Unit (OCU)

Rugged Pelican-style Case	✓	✓	✓
12" Touchscreen	✓	✓	✓
2.4GHz Digital Radio	✓	✓	✓
Lithium-Ion Battery	✓	✓	✓
Integrated Joysticks	✓	✓	✓
Preset Arm Positions	✗	✗	✓
Kinematic Modeling	✗	✗	✓
Collision Detection	✗	✗	✓
Video & Image Recording	✓	✓	✓
2-Way Audio	✗	✓	✓
Quad View Display	✗	✗	✓
Additional Control Modes	✗	✗	Cartesian & Joint



## ADDITIONAL FEATURES

### Digital Repeaters & Monitoring Stations

Need to increase your operating range? Want to provide "eyes and ears" for more operators? Our repeaters and secondary monitoring stations help expand your operation! These compact systems are compatible with all SuperDroid Tactical Digital Radio systems. Our secondary monitoring station displays the camera feed for other teams to view. They also double as signal repeaters. These are excellent if you have several entry teams or for investigating extensive areas. Custom repeaters are available on request.



### Multi-Axis Arm Attachments

Multiple arm-attachment tools for different scenarios. Window piercing tools, Hook/Object pullers, Wire cutters, and more.



### Carbon Fire Disruptor

Complete Carbon Fire 10 Disruptor kit with CFI Initiator for direct mounting to multi-axis arm. For EOD capable/qualified departments.



### HAZMAT Sensors

Survey hostile/hazardous situations staying out of harm's way. Use our robots for situations that are too difficult, dangerous, hazardous, lethal, toxic or just too hostile for humans to enter. Our robots can interface directly with MultiRAE HAZMAT sensors and display the information directly on your screen! No need to aim your camera at the sensor! It can also be installed and removed quickly and easily.



### Backup Battery System

Additional 24V 19.2Ah battery system & 11.1V 10Ah control battery system



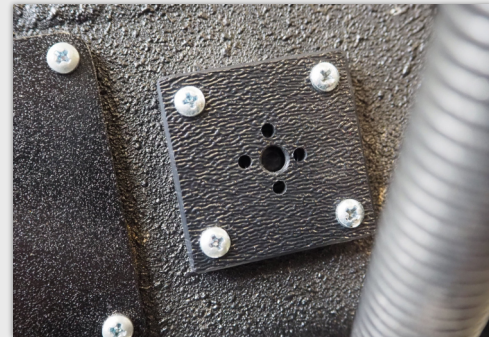
### Transport Case

Foam lined transportation case to protect your robot in storage and transit.



### Switch Guard

Prevent external tampering with the robots power button in the field.



### Removable Remote Release Hitch

Remotely operated release hitch can be added to tow stop strips, cables, and more. Allows for easy deliver and drop.

### High Gain Antenna with Magnetic Base

Operate your robot from the safety of your vehicle. Attach this antenna on the exterior to provide a clear signal.

### HDMI Video Splitter for OCU/Repeater

Display video feed on an external monitor via HDMI.

### Custom Additional Features

Want something that isn't listed here? Our engineers can work with you to add custom components and features!

## PRICING

- Available upon request.
- 1 year warranty included.

## STANDARD PAYMENT TERMS

1. Payment by check, money order or wire transfer is accepted.
2. Listed price based on 60% Due ARO, remainder prior to shipment.

## DELIVERY

1. Procurement of materials, assembly and testing is required
2. Lead time is typically 8-14 weeks
3. Shipping cost FOB Fuquay Varina, NC

## GENERAL TERMS

1. SuperDroid Robots, Inc is not responsible for special incidental or consequential damages resulting from any warranty or under any legal theory, including, but not limited to lost profits, downtime, goodwill, damage to, or replacement equipment or property, or any cost of recovering, reprogramming, or reproducing any data stored. ANY LIABILITY SHALL BE LIMITED TO REPLACEMENT OF DEFECTIVE PARTS. SuperDroid Robots, Inc. is further not responsible for any personal damages, including, but not limited to bodily and health damages resulting from any use of our products.
2. SuperDroid Robots, Inc. makes no representations as to the fitness of its products for specific uses. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS HEREBY EXCLUDED.
3. Agreements shall be construed in accordance with the laws of the State of North Carolina, and the rights and obligations created hereby shall be governed by the laws of North Carolina.
4. In the event a dispute or controversy arises, such dispute or controversy (including claims of default) shall be brought in the courts of Wake County, North Carolina and the plaintiff hereby agrees to this choice of venue.

## WARRANTY

1. SuperDroid Robots will repair any manufacturing defects for 1 years after shipment. Damage from abuse or neglect will not be covered. Any shipping costs are the responsibility of the purchaser.
2. Unlimited technical support.
3. Consumable items will not be covered by the warranty. Consumable items include, but are not limited to treads, chains, bearings, wheels, and batteries.
4. Extended warranties, spare parts, and maintenance training is available, contact us with specific needs. Service agreements are also available.

