# JAGUAR PLATFORM







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# DrRobot

# JAGUAR PLATFORM

# COMPLETE SYSTEM



Jaguar Mobile Robotic Platform is designed for indoor and outdoor applications requiring robust maneuverability. It comes with two articulated arms and is fully wirelessly 802.11N connected. It integrates outdoor GPS and 9 DOF IMU (Gyro/Accelerometer/Compass) for autonomous navigation. Jaguar platform is rugged, light weight (< 25Kg), compact, weather and water resistant. It is designed for extreme terrains and capable of climbing up stairs (up to 200mm step). The integrated high resolution video/audio and laser scanner (optional) provide remote operator detail information of the surrounding. Besides the ready to use control and navigation software, a full development kit including SDK, data protocol and sample codes, is also available.

# **Key Features**



Rugged and reliable mobile platform for indoor and outdoor applications requiring robust maneuverability



With two synchronized (or optional independently controlled) articulated arms



Indoor and outdoor operation for extreme terrains

Weather and water resistant enclosure



Climbing up > 45° slope or stairs (max 200mm or 8") Light weight (< 25Kg) and compact design with large payload



capacity Autonomous navigation with outdoor GPS and 9 DOF IMU



(Gyro/Accelerometer/Compass) Surviving max 900mm (3ft) drop to concrete

# Mobility

Terrain: Sand, rock, concrete, gravel, grass, soil and others wet and dry

Slope: > 45°

Maximum vertical step: 200mm (8")

Stair climbing: Max stair step height 200mm (8")

Traverse: > 260mm (10")

Two articulated arms (Standard: synchronized motion; Optional: independent con-

trolled)

Speed: 0 - 5.5Km/hr

Turning radius: 0, min 850mm (33.5") diameter of turning space

Ground clearance: 38mm (1.5")

Operator remote control

Autonomous navigation with GPS and 9 DOF IMU (Gyro/Accelerometer/Compass) Indoor vision landmark GPS (Optional)

# Survivability

Sealed weather resistant enclosure

Temperature: -30° to +50° Shock resistant chassis

Drop to concrete: Max: 900mm (3ft) Rated: 600mm (2ft)

Self-correction from flip-over with articulated arms

## Electronics

Motion and sensing controller (PWM, Position and Speed Control)

5Hz GPS and 9 DOF IMU (Gyro/Accelerometer/Compass)

Laser scanner (5.6m, 4m or 30m) (Optional) Temperature sensing & Voltage monitoring

Headlights

# Video / Audio

Color Camera (640x480, 30fps) with audio

## Communication

WiFi802.11N

Ethernet (Optional)

# **External Auxiliary Ports**

Ethernet (Optional)

General purpose communication and power port (Optional)



Managing max 200mm (8") vertical step (obstacle)

Integrated Laser scanner (Optional)

All 802.11N wirelessly connected

Integrated high resolution video camera with audio

Head mounted display (optional) and Gamepad controller providing outdoor operation with large and clear view even under direct sunlight



Ready to use control and navigation software

Full development kit including SDK, data protocol and sample codes, supporting Microsoft® Robotics Studio, Microsoft® Visual Studio, ROS, NI LabVIEW®, MATLAB®, Java®

# **Operator Control Unit**

Gamepad Controller

Head mounted display (Dual 640 x 480), equivalent to 60" display viewed in 2.7m (9 feet) (Optional)

Portable computer (Optional)

#### Power

Rechargeable battery: LiPo 22.2V 10AH

LiPo battery charger

Nominal operation time: 2 hours (Optional 4 hours)

# Motor

Track Motors (24V): 2 units

Max output (after gear down) (x2): Max 80W, 100Kg.cm/track

Rated current: 2.75A, Max current 16A

Arm Motor (24V): 1 unit

Max output (after gear down): Max 80W, 450Kg.cm

Rated current: 2.75A, Max current 16A

# **Dimensions**

Height: 176mm (7")

Width: 700mm (27.6")

Length 820mm (32.3") (extended arms) / 640mm (25.2") (folded arms)

Weight: 25Kg (Standard Configuration)

### **Payload**

Carrying Payload (on flat surface): max 15Kg Dragging Payload (on flat surface): max 50Kg

# Application Development

Full development kit including SDK, data protocol and sample codes, supporting Microsoft® Robotics Studio, Microsoft® Visual Studio, ROS, NI LabVIEW®, MATLAB®, Java®

Microsoft® ROBOTICS STUDIO



Microsoft\*













# CHASSIS



Jaguar Mobile Robotic Platform is designed for indoor and outdoor applications requiring robust maneuverability. Jaguar chassis comes with everything that Jaguar robot has except the electronic components. Articulated arms and all motors are included.

# **Key Features**



Rugged and reliable mobile platform for indoor and outdoor applications with robust maneuverability



With two synchronized (or optional independently controlled) articulated arms



Indoor and outdoor operation for extreme terrains

Weather and water resistant enclosure



Climbing up > 45° slope or stairs (max 200mm or 8")



Terrain: Sand, rock, concrete, gravel, grass, soil and others wet and dry

Slope: > 45°

Maximum vertical step: 200mm (8")

Stair climbing: Max stair step height 200mm (8")

Traverse: > 260mm (10")

Two articulated arms (Standard: synchronized motion; Optional: independent

controlled)

Speed: 0 - 5.5Km/hr

Turning radius: 0, min 850mm (33.5") diameter of turning space

Ground clearance: 38mm (1.5")

# Survivability

Sealed weather resistant enclosure

Temperature: -30° to +50° Shock resistant chassis

Drop to concrete: Max: 900mm (3ft) Rated: 600mm (2ft) Self-correction from flip-over with articulated arms

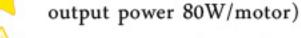
Light weight (< 15Kg) and compact design with large payload capacity



Managing max 200mm (8") vertical step (obstacle)



Surviving max 900mm (3ft) drop to concrete Three 24V DC motors with integrated encoder (with max



Maximum speed 7Km/hr



Self-correction from flip-over using articulated arms

#### Motor

Track Motors (24V): 2 units

Max output (after gear down) (x2): Max 80W, 100Kg.cm/track

Rated current: 2.75A, Max current: 16A

Arm Motor (24V): 1 unit

Max output (after gear down): Max 80W, 450Kg.cm

Rated current: 2.75A, Max current: 16A

# **Dimensions**

Height: 176mm (7") Width: 700mm (27.6")

Length 820mm (32.3") (extended arms) / 640mm (25.2") (folded arms)

Weight: 14.5Kg (Standard Configuration)

# Payload

Carrying Payload (on flat surface): max 20Kg Dragging Payload (on flat surface): max 50Kg









Distributor:















