



## Specialist EOD/IEDD Equipment

# VANGUARD™ MK2 Remotely Operated Vehicle

Cost-effective highly versatile robot for CBRNE and EOD/IEDD tasks



**Vanguard™ MK2 – The newest generation of high-risk use robots for responding to CBRNE and EOD/IEDD threats, HAZMAT operations, tactical and surveillance needs.**

Allen-Vanguard continues to design and supply cutting edge technologies with its next generation EOD robot, the Vanguard™ MK2.

This lightweight, portable, tactical EOD robot maintains excellence of quality with its additional features and improved functionality. The Vanguard™ MK2 continues to break new ground in mission support across all hazardous duty scenarios.

With rising demand for remote robotic response to increasingly complex threat situations, the Vanguard™ MK2 is designed to work with Allen-Vanguard's wide range of products for preparedness, response and handling of Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) threats.

The MK2 is the newest version of the Vanguard robot voted the best performing and most applicable system in a major performance evaluation of competing systems conducted by Battelle, for the Technical Support Working Group (TSWG) of the National Institute of Justice. A copy of the NIJ report can be made available on request.

The MK2 incorporates the enhancements recommended by Battelle – and more – making it “a major asset for bomb squads and law enforcement personnel.” Vanguard continues to work with TSWG to ensure the Vanguard™ MK2 meets all present and future robotic requirements identified for CBRNE, EOD/IEDD and First Response teams.

The MK2 possesses increased ground speed, longer mission duration, improved ruggedness, dual independent firing circuits and is still roughly half the cost of the next most capable robot on the market.

### OTHER ENHANCEMENTS & STANDARD FEATURES INCLUDE:

- Two-Way Digital Audio
- 10x Zoom Camera
- Integrated RS-232 Port for Additional Sensing and Detection Devices for CBRNE Operations
- Simultaneous use of multiple features



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	<b>Articulated arm for hard to reach places</b>
	<b>Ascends/descends steep stairs up to 45° angle</b>
	<b>Low profile to reach under vehicles</b>
	<b>360° pan-tilt-zoom camera</b>
	<b>Portable command station in ruggedised weatherproof case.</b>
	<b>Laptop display</b>
	<b>Lifts up to 16kg (35lb)</b>
	<b>Fits in a trunk of a car</b>
	<b>Extended disrupter reach</b>
	<b>IR camera for day and night operations</b>

The advanced modular design facilitates easy field repair - a critical success feature for remote locations or distant combat theaters - whilst it's compact size/weight envelope aids rapid deployment in all civil law enforcement or military scenarios.

The MK2's laptop computer-based Command and Control Unit (CCU) boasts multi-functional capabilities, ease-of-use and a highly intuitive user interface with key stroke or joystick operation.

With an improved center of gravity and optimized lifting capacity, the advanced MK2 outperforms its predecessor including climbing stairs and inclines up to 45 degrees and easily traversing virtually any type of rugged terrain.

Trusted by all users, the Vanguard™ MK2 sets the standard for functionality, modularity, versatility and cost-effectiveness.



### BATTELLE REPORT

“Fulfills more of the NIJ (National Institute of Justice) study's key attributes than other platforms.”

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STANDARD FEATURES & CAPACITIES		
FEATURE	QTY	DESCRIPTION
<b>Robot</b>		
Drive System	1	(2) 3.0 in. (7.6 cm) wide independent tracks
Wheel Kit	1	(2) 6.0 in. (5 cm) wheels & (1) rear swivel
Turret	1	+/-87°
Shoulder	1	0-180°
Elbow	1	0-270°
Claw-Wrist	1	0-300°
Claw-Rotate	1	Continuous
Claw-Pincer	1	0-20 cm (8.0 in.) wide with rubber gripper
Pan & Tilt	1	PTZ, color zoom camera, continuous panning 360°, 10x zoom
Drive Camera	1	Colour CCD
Claw Camera	1	Colour CCD with LED illumination
Main Light	2	Dual LED lights with high and low beam
Water Proof Speaker	1	For two-way digital communication
Tool Outlet	1	For 24 volt accessories (example: cordless tools)
RS232 Com. Port	1	For add-on detectors (auxiliary devices for CBNRE remotely reports information directly from robot to CCU)
Dual Firing Port	1	2 independent firing circuits
Battery Packs	2	24 VDC quick-change packs
Charger	2	24 VDC 110 or 220
<b>Command and Control Station</b>		
• Laptop, with Robot Interface Software		
• Photo Capture		
• 150m (500ft) umbilical cable (tether)		
• DC Remote Power 3 + Hours		
• AC Power (110 or 220 volts)		
• Rugged Waterproof Transit Case: 22x53x38cm (8.5x21x15in) HxWxD		
• Weight: 20kg (45lb)		
• Telescopic Video Receiver Mount		
• Laptop Sun Visor		
• Headset for Two-Way Digital Audio		
• Variable Speed Joystick with Two-Way Audio Operation		
• Multi-Function Operation (Drive and Pan Camera Simultaneously)		
• Intergration of Remote Detectors		



Wheel Kit (with rear swivel)



24VDC Battery Pack



Tether Reel with Slip Ring



Video Heads Up Display



Proparms 20 mm Recoilless Disrupter

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OPTIONAL FEATURES		
FEATURES	QTY	DESCRIPTION
RF System	1	Wireless system (900MHz, 2.4 GHZ video)
Remote RF Relay Station	1	Tripod and remote power for 150m (500ft) repeater
Transit Case	1	Portable carrying case for robot and accessories
Disrupter	1	Range of disruptor mounts available (e.g. PAN, Proparms)
Heads Up Display	1	Video glasses for daylight conditions
Arm Mounted IR Camera	1	For low light conditions
Fibre Optic Cable & Reel	1	Armoured, robot-mounted, 300m (1000ft), self-spooling

GENERAL CAPACITIES	
FEATURES	DESCRIPTION
Platform load capacity	at least 80kg (180lb)
Lift Capacity (arm extended)	8.0 kg (17.6 lbs.)
Lift Capacity (arm retracted)	16.0 kg (35 lbs.)
Vertical Reach	132 cm (52.0 in.)
Horizontal Reach	96.5 cm (38.0 in.)
Ground Clearance	5.75 cm (2.25 in.)
Overall Length	91.5 cm (36.0 in.)
Overall Width	43.5 cm (17.0 in.)
Stowed Height	40.5 cm (16.0 in.)
Overall Weight	52 kg (115 lbs.)
Mission Duration	2-3 hours + (quick-change battery pack)
Stair Climbing Angle	45° (using the anti-topple device)



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