

JOINT BIOLOGICAL TACTICAL DETECTION SYSTEM

Mobile biological threat detection and identification at the point of need

Chemring

Sensors & Electronic Systems



The **Joint Biological Tactical Detection System (JBTDs)** combines cutting-edge bioaerosol detection and collection technology with a handheld confirmatory identifier in a rugged, modular design to provide actionable situational awareness during a biological event.

Whether deployed on a vehicle, around a forward operating base, or at an airfield, the JBTDs provides the earliest possible confirmed evidence of a biological attack. Rapid understanding means earlier mitigation measures, fewer operational impacts, and fewer casualties.

KEY CAPABILITIES

Trigger-Based Detection: Automatically detects the presence of potential biological aerosol hazards utilizing Tactical Biological Detector Generation 2 (TACBIO® 2), developed by U.S. Army DEVCOM Chemical Biological Center (CBC).

Agent Collection: Captures aerosol samples for confirmatory identification.

Agent Identification: Gold-standard polymerase chain reaction (PCR) at the point of need.

Modular System: Scalable from individual units to networked configurations. Component level upgrades support future capability enhancement.

Operational Flexibility: Deployable across multiple echelons including tactical vehicles, shelters, and fixed-site locations.

Operational Impact: JBTDs transforms biological defense from reactive to proactive. By combining early warning, rapid confirmation, and networked intelligence in a rugged, modular system, it ensures commanders can act with speed and confidence—protecting lives and preserving mission readiness.

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Characteristics

Threat Detection, Collection & Identification	Aerosolized bacteria, bacterial spores, viruses, and toxins
Interferent Rejection	Robust operation in the presence of: fog, oil, JP8, Gas/diesel mixture, road dust, etc.

Specifications

Detection Sensitivity	Detection of bacteria, viruses, and toxins at less than 200ppl
False Alarm Rate (Detector)	Less than one false alarm every 168 hours
Time to Detect	60 seconds
Particle Size	1-10 microns
Detector Flow Rate	1 Liter per minute (LPM)
Collection Media	Electret Filter
Collection Flow Rate	200 LPM
Confirmatory Sample	6 ml in standard buffer
Extraction Time	<1 minute
Local User Interface	LCD with membrane keypad
Remote User Interface	Command and Control, mapping and detection via TAK
Data Interface/Storage	Ethernet, USB, Internal Flash
Set-up Time	2 minutes
Sensor Power	110VAC - 240VAC (50-60Hz) and 10 - 30 VDC
Sensor Battery Life	12+ hours
Sensor Size/Weight	1.5 ft ³ / 32 pounds

Environmental

Operating Temp.	-10°C to 50°C
Storage Temp.	-40°C to 70°C
Enclosure Rating	IP66
Vibration	MIL-STD-810
Drop Test	MIL-STD-810

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