



Unmanned

Tactical

Security

**TACTICAL BIOLOGICAL DETECTOR 2 (TACBIO® 2)** is a compact, rugged, and autonomous biological trigger developed by the U.S. Army DEVCOM Chemical Biological Center (CBC). This field-proven and production-ready system provides continuous, real-time monitoring of the environment for airborne biological aerosols, supporting force protection, early warning, and situational awareness in demanding operational settings.

Selected by the U.S. Military as the biological trigger for the Joint Biological Tactical Detection System (JBTD), TACBIO® 2 has demonstrated proven performance in operational environments. It operates continuously in both indoor and outdoor conditions without consumables, detecting bacteria, spores, viruses, and toxins through semiconductor ultraviolet light-emitting diodes.

The 275 nm excitation source induces biofluorescence directly in viral and toxin particles, while a dual-channel detector enhances discrimination against background aerosols. The system reports biological particle data once per second and can locally alarm within 60 seconds of a potential biological event.

With a low-power, integration-ready design compatible with vehicle power, solar power, and Power-over-Ethernet (PoE), TACBIO® 2 is ideal for mobile, fixed, and uncrewed platforms, as well as for integration into other systems requiring real-time biological particle detection. Its proven reliability, production availability, and scalable architecture make it an exceptional choice for both military and civilian biological detection applications.

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### Characteristics

Threats Detected	Aerosolized bacteria, bacterial spores, viruses, toxins
Interferent Rejection	Not affected by common interferents such as fog, oil, JP8, Gas/ diesel mixture, road dust, etc.
False Alarm Rate	Lowest available false alarm rate for low-cost continuous biological monitors

### Base Specifications

Consumables	None
Detection Sensitivity	Less than 200 ppl
Detection Time	60 seconds
Remote Analysis	Data available every 5 seconds
Weight/Size	2 pounds / <.15 ft <sup>3</sup>
Power	6.5-30 VDC at 1W
Base Comms	RS232 / USB / GPIO
Data Rate Options	<ul style="list-style-type: none"> <li>Detector 0.13kbps</li> <li>BIT Status 1.36kbps</li> <li>Max Data &lt;32kbps</li> </ul>

### Optional Specifications

Networking	<ul style="list-style-type: none"> <li>Wired Ethernet</li> <li>Tactical Radios (e.g. Trellisware Ghost or Persistent Systems MPU5)</li> <li>Low-power Wireless</li> </ul>
Protocols	JSON, COT, CCSI, ISA, SFTP
Power	Battery Powered or Power-over-Ethernet (PoE)
Remote Interface	<ul style="list-style-type: none"> <li>C2 and mapping via TAK</li> <li>Engineering Data Viewers</li> </ul>
Encryption	AES-256
Triggered Collection	Automatic particle collection on detection

### Environmental

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

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