



SIMPLICITY - SPEED - PRECISION

Application Note

Serstech Arx mkII for Narcotics Enforcement Operations

Overview

The **Serstech Arx mkII handheld Raman spectrometer** provides U.S. Customs and Border Protection and local narcotics task forces with a fast, reliable, and field-deployable solution for identifying controlled substances and precursor chemicals. Built for frontline interdiction and investigative operations, the Arx mkII delivers laboratory-grade chemical analysis in seconds—directly at inspection sites, vehicle checkpoints, ports of entry, and crime scenes.

Operational Principle

The Serstech Arx mkII uses **Raman spectroscopy** to identify unknown substances by measuring the inelastic scattering of laser light. Each compound produces a distinct spectral fingerprint, which the Arx mkII instantly matches against a comprehensive reference library. This non-contact and non-destructive method enables safe identification of powders, tablets, liquids, and gels—even through transparent or translucent packaging.

Advantages for CBP and Law Enforcement

- **Through-Container Analysis:** Identifies high-risk substances such as fentanyl and methamphetamine without opening bags, vials, or plastic wrap—minimizing officer exposure.
- **Extensive Narcotics Library:** Preloaded databases include thousands of controlled substances, pharmaceuticals, cutting agents, and synthesis precursors. Libraries are fully editable to include emerging street drugs or locally relevant compounds.
- **Rapid Field Screening:** Produces positive identifications in less than 10 seconds, supporting on-scene decisions during vehicle stops, parcel inspections, or border searches.
- **Rugged and Field-Ready:** Designed for extreme operational environments, the Arx mkII meets **MIL-STD-810G** and **IP65** standards for shock, dust, and moisture resistance.



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- **Automatic Documentation:** Each scan includes a full spectral record, time/date stamp, GPS location, and operator ID—supporting secure digital evidence management and court admissibility.
- **Interoperability:** Results can be exported via USB, Wi-Fi, or secure network integration for immediate transmission to command centers, forensic laboratories, or case management systems.
- **Low Training Requirement:** A guided user interface, large glove-friendly touchscreen, and self-calibration features allow non-technical personnel to achieve reliable results with minimal instruction.

Use Cases

- **Border Enforcement:** CBP officers can rapidly confirm narcotics and precursor chemicals in cargo, parcels, and vehicles, improving throughput while maintaining safety and evidentiary integrity.
- **Task Force Operations:** Narcotics and interdiction units can identify substances at raid sites, overdose scenes, or clandestine labs—reducing reliance on delayed laboratory analysis.
- **Evidence Processing:** The Arx mkII supports chain-of-custody procedures by automatically logging results that can be imported directly into digital case files.
- **Hazardous Substance Response:** Enables first responders to safely analyze suspected fentanyl or unknown powders in the field using through-container capability and Class 1M-safe optics.

Data Management & Integration

Serstech's **ChemDash Cloud** software provides secure data storage, spectral comparison, and centralized fleet management. Agencies can monitor usage, synchronize libraries, and share results across teams while maintaining full compliance with security and privacy protocols.

Training & Support

Serstech provides agency-specific training modules, covering safe handling procedures, spectral interpretation, and advanced library management. Optional refresher sessions and remote diagnostics ensure continued operational readiness.

Conclusion



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The **Serstech Arx mkII** transforms field narcotics enforcement by delivering immediate, reliable substance identification wherever it's needed most. For both **CBP officers** safeguarding U.S. borders and **local narcotics task forces** combating illicit drug distribution, the Arx mkII enhances operational safety, accelerates decision-making, and strengthens the evidentiary chain from field detection to courtroom presentation.