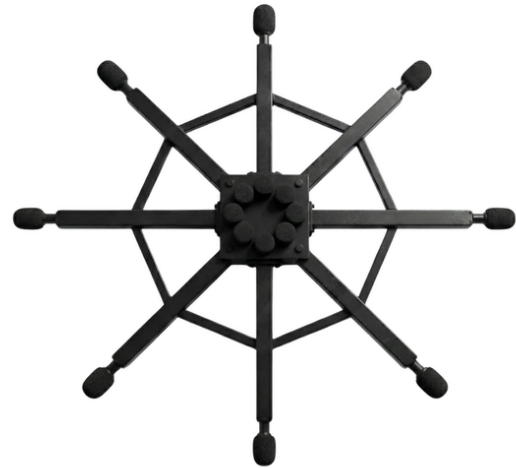


USES

- Infrastructure and perimeter monitoring
- Public safety and rapid response
- Event and venue security
- Industrial and transport site coverage
- Force protection and training areas

FEATURES

- Azimuth FOV: -60 to +60° az (120° total; adjustable)
- Elevation: -75 to +75° el (150° total; 0–75° ground)
- Outputs: Detection, Confidence, Class, Az, El
- Power: AC / DC / Battery
- Networking: LoRa / WiFi / Cellular / Wired



OVERVIEW

DESCRIPTION

Oscura-120 is a 16-microphone directional acoustic array node for networked detection and classification of airborne and impulsive acoustic events. It provides event detections with confidence and event class outputs, plus direction estimates (azimuth and elevation) for rapid cueing. In multi-node deployments, event reports can be aggregated for monitoring and, where configured, network-level localization for applicable event types (deployment geometry and communication topology dependent).

PRINCIPLE OF OPERATION

Oscura-120 captures multi-channel acoustic measurements and digitizes them via an onboard ADC. Signals are processed by an integrated system to perform beamforming and direction estimation. Beamformed audio and derived features are evaluated by ML models to produce detections, classification, and confidence scoring. When enabled, successive detections can be fused over time into tracks using system tracking logic.

SECURITY & DATA TRANSMISSION

All event data and control traffic are encrypted in transit to the interface with the customer network. Authentication, access control, key provisioning, and secure update mechanisms are supported (deployment-dependent; implementation details available upon request).

INTEGRATIONS

Oscura-120 includes a web dashboard GUI for live monitoring, instant alerts, event review, and node health/status visibility.

Optional interfaces support event export and alert forwarding via REST API, MQTT, webhooks, and syslog. Military/command integrations are supported where required, including TAK clients (ATAK, TAK Server or similar) via Cursor on Target (CoT), with additional C2 formats supported by configuration/adapters.

MANUFACTURING AND STABILITY

Oscura-120 is built for outdoor field deployment with an enclosure designed to maintain stable performance across changing weather and site conditions.

- Outdoor-ready (IP66)
- Wind effects minimized by mechanical construction
- Ruggedized build for field deployment
- EMI/RFI-resilient enclosure with shielding

CALIBRATION AND TRACEABILITY

Each unit is traceable by serial number. Units are factory verified and calibrated under defined reference conditions (see Specifications).

Unit-level records and field verification procedures available upon request.