

# SURGE Sensor

## TACTICAL PASSIVE RADAR & DIRECTION FINDING FOR AIRSPACE AWARENESS

SURGE is a rugged, mobile passive RF sensor built for expeditionary units and fixed-site operations alike—optimized for use at forward operating bases or rapidly shifting tactical environments. Combining multi-static passive radar and RF detection/direction finding in a single package, SURGE delivers two mission-critical capabilities—without increasing SWaP.

Whether mounted to a vehicle or emplaced at a temporary checkpoint, SURGE gives units real-time low-altitude situational awareness and the ability to detect and track advanced aerial threats—while staying fully passive and undetectable.



### Key Operational Advantages

- **Dual-Mode Superiority**  
SURGE performs both passive radar and RF detection simultaneously\*, providing enhanced threat classification and improved targeting confidence.
- **Detects RF-Silent Threats**  
Passive radar capability enables the tracking of targets others miss—including dark drones and other RF-silent platforms.
- **Designed for Contested Environments**  
Operates across diverse environments—urban, rural, mountainous—by leveraging available RF energy from a variety of signal sources, providing continuous passive radar performance.
- **Fully Passive & Emission-Free**  
Tracks low-flying threats (sUAS, drones, loitering munitions) without revealing its presence, so your unit doesn't become the target.
- **Battlefield Integration Ready**  
Open APIs and flexible outputs enable real-time integration into tactical C2 systems like ATAK, CLUE, or Palantir COP tools.

### Field Proven & Mission Ready

- Selected for **U.S. Army Program of Record**.
- Integrated on GMV, HMMWV, Hilux, and S-MET platforms.
- MIL-STD-810H and MIL-STD-461G designed for shock, weather, and EMI resilience compliance.
- Demonstrated performance in contested multi-domain exercises.

\*Simultaneous dual-mode operation available via Hidden Level's low-SWaP Co-Processor add-on.



DESIGNED & MANUFACTURED  
IN THE USA

# SURGE Sensor Specifications

## PERFORMANCE

- **Frequency Coverage:**
  - **Passive Radar & Direction Finding:** 1.7–6.0 GHz
  - **RF Detection/TDOA:** 0.4–6.0 GHz
- **Field of View:** 120 deg Azimuth × 90 deg Elevation
- **Track Accuracy:** <2 deg Azimuth, <1 deg Elevation
- **Track Update Rate:** 2 Hz
- **Detection Range:**
  - Up to 25 km for UAS and low-observable threats (modality, conditions, and target dependent)
  - 50k+ km for heavy manned aircraft

## ENVIRONMENTAL HARDENING

- **Operating Temperature:** -32 deg C to +49 deg C
- **Ingress Protection:** IP66 (dust and water resistance)
- **Design, Standards & Compliance:**
  - MIL-STD-810H (shock, vibration, temperature)
  - MIL-STD-461G (EMI / EMC)

## SIZE, WEIGHT & POWER (SWaP)

- **Sensor Enclosure:** 20 in W × 39 in H × 15 in D; 75 lb
- **Co-processor Enclosure:** 16 in W × 8 in H × 14 in D; 24 lb
- **Power Requirements:**
  - **Sensor:** 335 W
  - **Co-processor:** 250 W
- **Power Input:**
  - **DC:** 20–33 VDC, <25 A, MIL-STD-1275
  - **AC:** 100–240 VAC, <6 A

## INTEGRATION & DATA OUTPUTS

- **Primary I/O:** 100 Mbps / 1 Gbps RJ45 Ethernet
- **Raw Data Output:** 100 Gbps SM LC Fiber
- **Output Data Format:** GeoJSON-based API (track and detection data)
- **C2:** JSON RESTful API (mode, run/halt, etc.)
- **Network Compatibility:** Fully networkable and seamlessly integrates into Hidden Level's Airspace Monitoring Service (AMS)



## DEPLOYMENT OPTIONS & FLEXIBILITY

- **Vehicle-Mounted:** Integrate onto mobile platforms for surveillance and convoy support.
- **Tripod-Based:** Low-SWaP enables rapid deployment and teardown.
- **Fixed-Site and Tower Mounted:** Suitable for fixed and persistent low-altitude awareness.
- **Software Defined Flexibility:** SURGE evolves with the threat—fast, flexible, and future-ready.

**Hidden  
Level**

Protect your airspace with multi-function, passive RF sensors that deliver decision advantage and coordinated response—long-range detection of aerial threats across contested and complex environments, legally deployable and battle-tested.

Learn how at [hiddenlevel.com](https://hiddenlevel.com).