

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 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 multiple Army vehicles.
- MIL-STD-810H and MIL-STD-461G designed for shock, weather, and EMI resilience compliance.
- Demonstrated performance in contested multi-domain exercises.



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:**
 - Passive Radar - 5 - 30+ km, depending on emission source and target type
 - RF Detection - 7 - 25 km, depending on environment

ENVIRONMENTAL HARDENING

- **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

HIDDENLEVEL.COM

Hidden Level is the world's leading RF intelligent platform, delivering mission-defined hardware and software solutions that combine passive sensing, persistent data, and applied intelligence to help customers and partners address complex safety and security challenges across air, ground, sea, and space. Designed and manufactured in the USA. 🇺🇸

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