

Technical Data Sheet

HARRIER

Ground Based Sense-and-Avoid



Ground-based Sense-and-avoid Radar

DeTect's HARRIER S200d Ground-based Sense-and-avoid (GBSAA) is based on DeTect's HARRIER Air Surveillance Radar technology and provides long range surveillance and monitoring of airspace to extend UAV operations beyond line-of-sight. The HARRIER is proven in GBSAA applications by Unmanned Aerial Systems developers and operators since 2008. Systems are available in fixed and mobile configurations and can custom designed and installed into or onto customer provided vehicles.



ABOVE: HARRIER GBSAA system installed into customer-provided UAV operations support vehicle.

SUMMARY SPECIFICATIONS

subject to change without notice

Model :	S200 - GBSAA
Application:	UAS ground-based sense and avoid and situational awareness
Functionality	Real-time airspace and surveillance with user-definable risk alerting
Configuration:	Available in fixed or mobile (trailer, truck, vehicle) configurations in standard and custom designs
Sensors:	200 w solid-state Doppler S-band radar sensor with 50,000 hour MTBF and all weather detection (X-band systems also available)
Operating Range:	Full 360 degree 3D coverage with detection to 16 miles
Power:	110/220 VAC, 60/30 amps service with UPS back-up & power conditioning (30 minutes) & optional auto-start single or dual 6 kW propane or diesel generator & fuel tank to support 10-20 days 24-7 operation
Network:	TCPIP connection supports multi-user web remote real-time system display, control & data access via fiber optic

Advantages of the HARRIER GBSAA

- Solid-state Doppler S- or X-band radar with 50,000 hour MTBF
- Detection of cooperative (transponder equipped) and non-cooperative aircraft to 20+ miles
- Automatic Dependent Surveillance-Broadcast (ADS-B) dual band receiver (978MHz and 1090MHz). Detects ADS-B equipped aircraft within a 150 mile radius
- Automatic target type classification using DeTect's Intelligent Radar™ technology
- Multi-functional for simultaneous detection of UAVs, drones and conventional aircraft (ultralights, helicopters, small-to-large aircraft)
- Optional cue-to-target camera integration
- Automatic operation with user-definable risk alert zones and intrusion perimeters
- Full remote control and real-time information display (radar and video) to multiple users through secure network and web displays
- Includes real-time display to wireless and cellular devices (smart phones, tablets) alerts

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GROUND BASED SENSE-AND-AVOID



DeTect's radar processing technology developed specifically for detection and tracking of small, low radar- cross section, non-linearly moving targets make it one of the most sensitive, affordable security and surveillance radar technologies on the market today for locating and monitoring a wide range of targets including aircraft, UAVs, drones, ultralights, ships, and boats. The HARRIER security and surveillance radar provides full surveillance coverage ground level to altitudes up to 20,000 feet with ranges out to 20+ miles and allows the system to function as a multi-purpose sensor for simultaneous detection, alerting and tracking of aircraft and vessels. HARRIER is an ideal cost- effective solution for many force protection and homeland security applications. HARRIER functions include:

- Airspace monitoring & surveillance
- Aircraft detection & tracking
- Drone & small UAV detection & defense
- Ultralight (ULAD) detection & interdiction
- Marine, coastal & shoreline security
- Ground-based sense-and-avoid
- Collision & obstruction avoidance
- Gap coverage and filler

Applications

HARRIER applications include a wide range of sites, types, sizes and configurations from single facilities to large-area or linear radar networks for force protection and facility security, including:

- Commercial airports & military airfields & ranges
- Unmanned aerial vehicle (UAV) operations support
- Government installations
- Industrial plants, refineries & power plants
- Ports, waterways & coastlines
- Prisons & Jails
- Border control areas
- High security facilities
- Stadiums, racetracks & other public venues
- Cities, campuses & shorelines
- Gap filler radars

Interoperability

HARRIER systems can operate as a standalone security/force protection radar system detecting and alerting perimeter or zone

incursions by air and on events via pager or cellular phone or direct to remote monitoring stations. HARRIER ASR systems can also be used as coverage gap filler radars to provide data or large-scale navigation and military surveillance radars in areas blocked by terrain or structures including wind turbine farms.

The system can be programmed to detect intruders crossing a user-defined site perimeter, providing automated notifications to security forces. Alarm functionality can provide notification of security by text messaging or email. Integrated Technology: HARRIER systems use electronically variable high speed scanning (up to 48 rpm) for enhanced small target detection in high clutter environments such as developed areas, terrain and high sea states. Systems are optimized for detection of small targets that includes low-profile manually propelled watercraft, small motorized high-speed watercraft, low flying aircraft, ultralights and drones. Systems are offered in fixed and mobile configurations and can be linearly networked to cover large areas such as border crossings, coastlines and large facilities. DeTect's HARRIER technology is highly customizable providing radar, video, and thermal detection and acoustic deterrent through a single user

Features Include

- Microsoft Windows-based operating software
- Integrated radar, thermal, video, acoustic, sonar & deterrents
- Display activated "point-and-click" video zoom & deterrent activation
- Compatible with other security & display systems
- Site-specific underlay maps with mobile mapping technology
- Identifies & tracks each target by size, position, speed & heading
- Audible & visual intrusion alarms with optional notification by email & radio pager

