



VORTEX

MULTI-MISSION AESA RADAR FAMILY

Software-defined X-band AESA radar solutions
for mission-critical operations



FORCE AND ASSETS
PROTECTION



MICRO UAV
DETECTION



360°
VIEW



KINETIC EFFECTORS
INTEGRATION



SOFTWARE-DEFINED. MISSION-READY.

The VORTEX™ family is a **suite of software-defined X-band AESA radars** engineered for military and tactical air defense. Purpose-built to detect, classify, and track micro-UAVs, drone swarms, loitering munitions, and low-altitude rotary-wing aircraft in heavily contested electromagnetic environments.

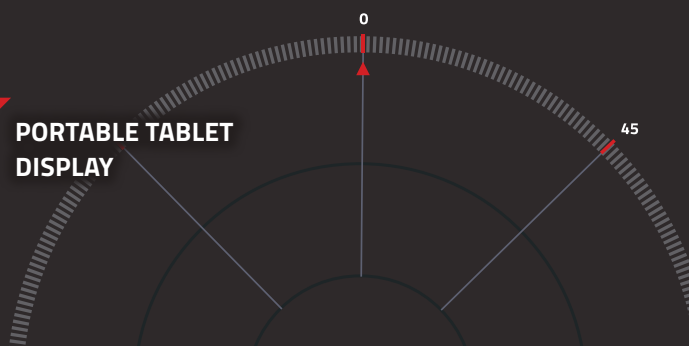
KEY CAPABILITIES

- Micro-Doppler extraction for precise target classification and threat discrimination
- Digital beamforming
- AI target classification
- Multi-layer ECCM
- Kinetic and EM effector integration (CoT)
- Scalable multi-sensor networking
- On-the-move tracking
- Embedded training simulator



The VORTEX™ architecture represents a fundamental shift from traditional hardware-constrained radars to software-defined spatial intelligence engines.

Delivering a clean, real-time tactical picture under severe meteorological stress, coastal clutter conditions, and heavily contested electromagnetic environments.



THREE SOLUTIONS ENGINEERED FOR EVERY OPERATIONAL DOCTRINE

While sharing a technological core, the VORTEX™ family is divided into highly specialized configurations optimized for power, weight, mobility, and spatial coverage across specific operational doctrines.

MULTI-DOMAIN TARGETS

SCALABLE NETWORKING

MIMO PROCESSING

FAULT-TOLERANT INTERCONNECTION



VORTEX X

The Universal Multi-Mission Tactical Sensor

The most adaptable and universal radar solution in the portfolio, engineered for expeditionary military forces, forward-deployed units, and naval installations. The VORTEX X delivers the broadest detection matrix in the family, tracking aerial threats and swarms, ground vehicles, and dismounted personnel. Up to 4 antennas interconnect for 360° coverage, geo distributed up to 2 km apart.

SENSOR FUSION: RADAR, ELECTRO-OPTICS, AND SONIC SENSOR INTEGRATION

C5ISR INTEGRATION

INTEGRATED GPS GEOREFERENCING

CRITICAL INFRASTRUCTURE PROTECTION

CLUTTER REJECTION



VORTEX M

Persistent Wide-Area Force Protection Radar

Fixed-position radar mounted on a mechanical scanning assembly for 360° airspace coverage, dedicated to the long-term protection of military bases, airbases, and high-value infrastructure. The VORTEX M connects via fiber to remote command centers and scales across multiple installations for centralized C5ISR integration.

HYBRID AESA AND MECHANICAL ROTATION FOR RELIABLE 360° COVERAGE.

VORTEX S

Armor and Effectors Integration Radar

AESA system optimized for tight space integration with armoured combat vehicles, main battle tanks, and remote weapon stations.

Serving as the embedded radar sensor for mechanized infantry units, the VORTEX S feeds real-time target track via CoT directly to anti-aircraft guns, missiles, or electronic warfare jammer effectors, maintaining continuous tracking while on the move.

ADAPTABLE ANTENNA INCLINATION.



KINETIC AND EM EFFECTOR COUPLING

2° DIGITAL BEAM WIDTH

ON-THE-MOVE TRACKING

TECHNICAL SPECIFICATIONS

ARCHITECTURE

Radar type: AESA
Frequency band: X-band
Waveforms: CW, FMCW (LFM)
Beamforming: Digital
Beam width: 5°

TARGET DETECTION

Micro UAV: 2 - 3 km
Helicopter: 5 - 12 km
Fixed-wing aircraft: 3 - 5 km
Targets per scan: up to 20 detection / 15 tracking
Swarm detection: Yes
Classes: 9 (micro UAV, loitering munition, swarm, jammer)
Classification: AI-based, Doppler analysis

CONNECTIVITY

Data interface: 1 GE Ethernet, SFP fiber optics
Protocols: Asterix, CoT, JSON, custom API
Integration: C5ISR, BMS, fire control, sensors, effectors
Power supply: 20–33 VDC MIL-STD-1275 / 230 VAC

COVERAGE

Azimuth: 90° – 360°
Elevation: 50° – 70°
Scan refresh rate: 1–2 Hz

COMPLIANCE

MIL-STD-810



*From detection to engagement in seconds. **VORTEX** feeds real-time target data directly to kinetic and electronic effectors, closing the kill chain without operator delay.*

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