

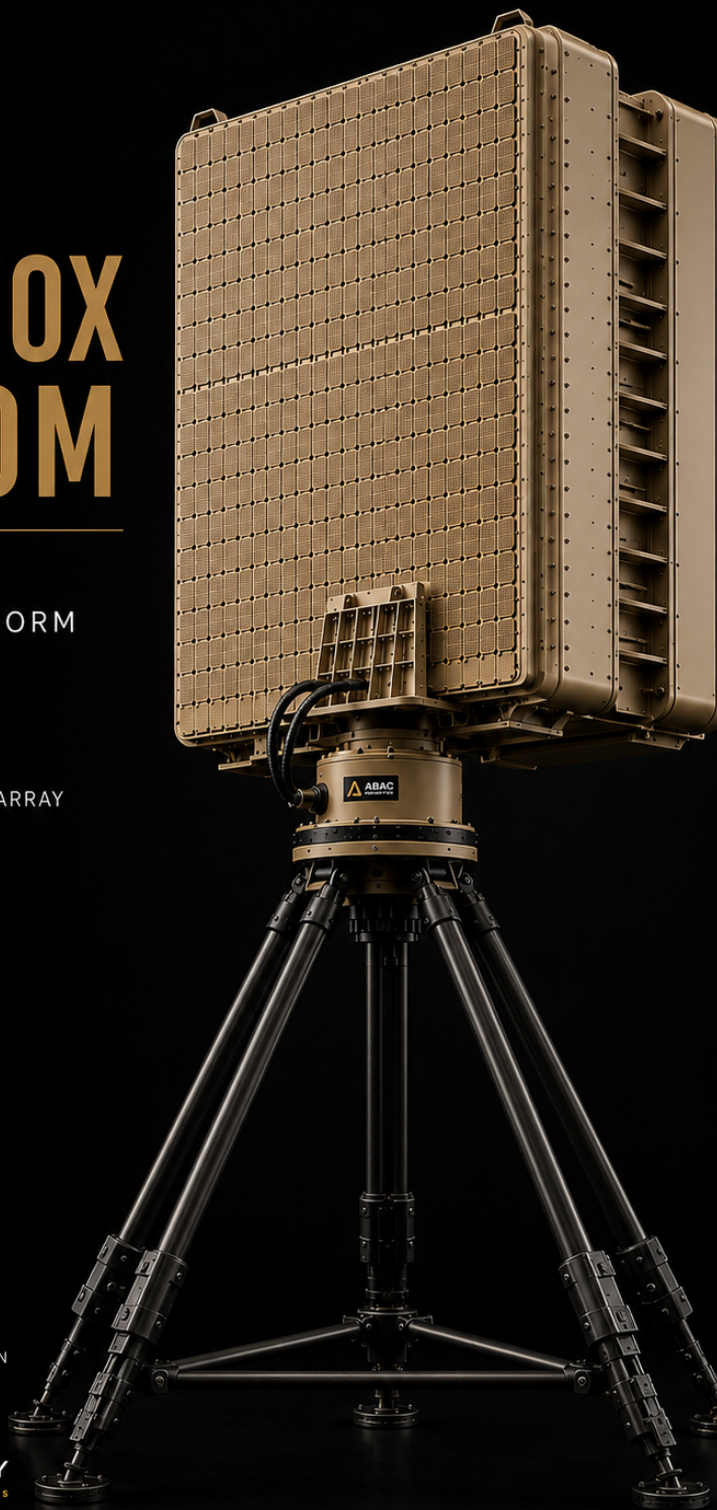
AERIS-10X CUSTOM

EXTENDED-RANGE
AESA RADAR PLATFORM

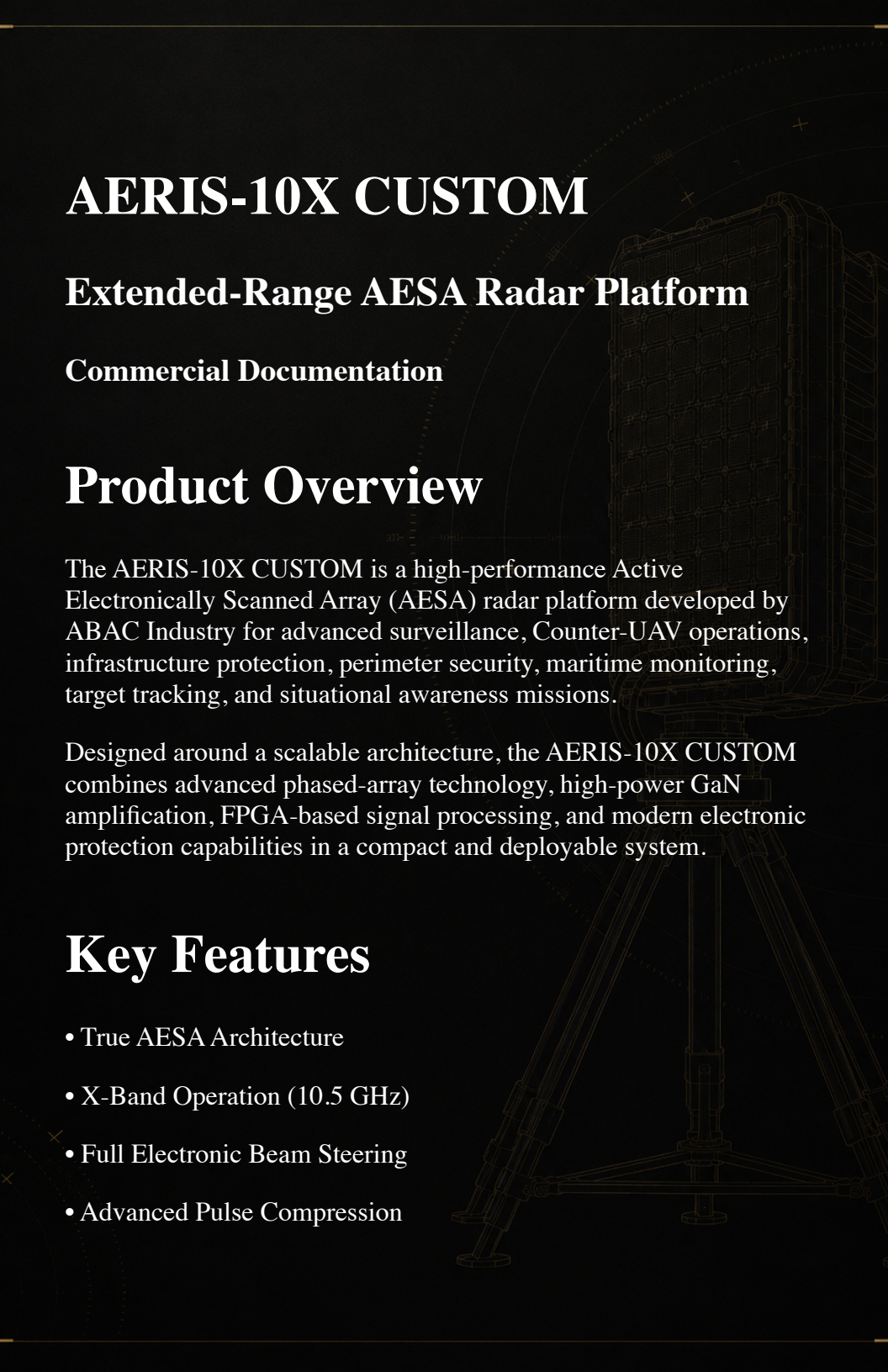
TRUE ACTIVE
ELECTRONICALLY SCANNED ARRAY

CUSTOMIZABLE
DETECTION RANGE

COMMERCIAL DOCUMENTATION



AERIS-10X CUSTOM



Extended-Range AESA Radar Platform

Commercial Documentation

Product Overview

The AERIS-10X CUSTOM is a high-performance Active Electronically Scanned Array (AESA) radar platform developed by ABAC Industry for advanced surveillance, Counter-UAV operations, infrastructure protection, perimeter security, maritime monitoring, target tracking, and situational awareness missions.

Designed around a scalable architecture, the AERIS-10X CUSTOM combines advanced phased-array technology, high-power GaN amplification, FPGA-based signal processing, and modern electronic protection capabilities in a compact and deployable system.

Key Features

- True AESA Architecture
- X-Band Operation (10.5 GHz)
- Full Electronic Beam Steering
- Advanced Pulse Compression

- Multi-Target Tracking
- Track While Scan (TWS)
- Open System Architecture
- Anti-Jamming Features
- GPS/GNSS Protection
- Fire Control Radar Capabilities
- Modular & Customizable Design



Radar Architecture

Parameter	Specification
Radar Type	Active Electronically Scanned Array (AESA)
Operating Frequency	10.5 GHz (X-Band)
Waveform	Linear Frequency Modulation (LFM)
Beam Steering	Full Electronic
Steering Coverage	±45° Azimuth / Elevation
Antenna Array	32×16 Dielectric-Filled Slotted Waveguide
Power Amplifiers	16 × GaN Power Amplifiers
Amplifier Power	10 W per Channel
Signal Processor	Xilinx XC7A100T FPGA
System Controller	STM32F746
Interface	USB 3.0
Software	Python GUI
Integration	Open API

Detection Range

The AERIS-10X CUSTOM features a scalable architecture allowing range performance to be adapted according to operational requirements.

Typical configurations support detection ranges up to 50 km.

Range performance can be customized through:

- Antenna dimensions
- AESA element count
- Transmit power configuration
- Signal processing architecture
- Cooling system design
- Mission profile optimization

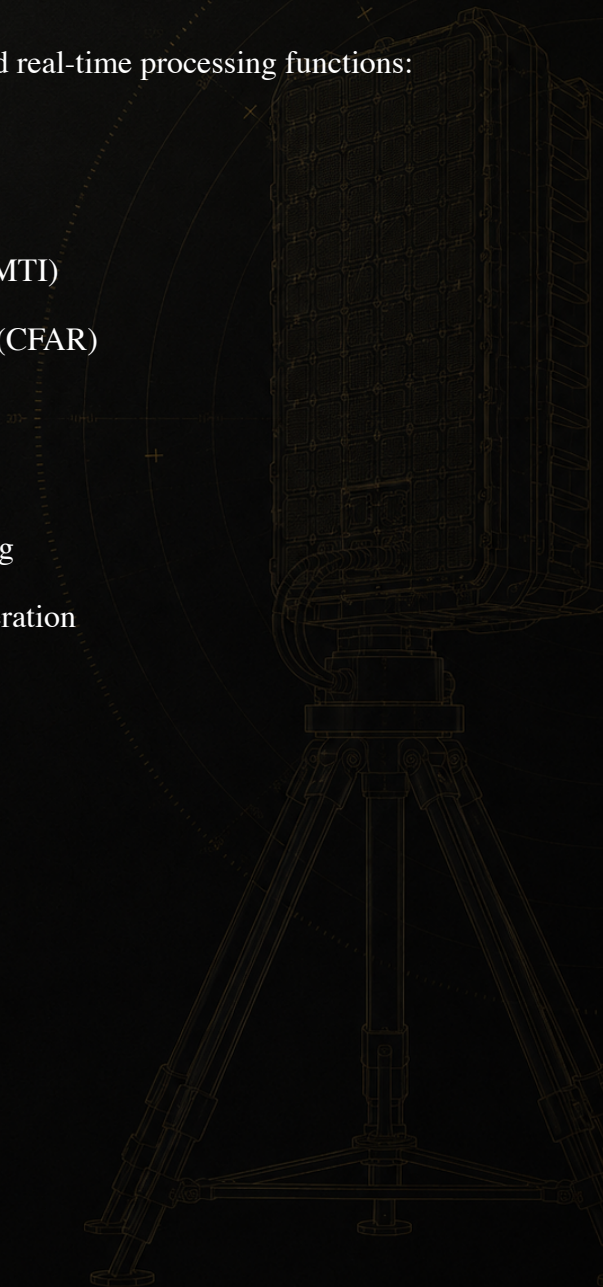
This flexibility allows the platform to be configured for short-range, medium-range, long-range, or extended-range surveillance missions.



Signal Processing Capabilities

The radar integrates advanced real-time processing functions:

- Pulse Compression
- Doppler FFT Processing
- Moving Target Indication (MTI)
- Constant False Alarm Rate (CFAR)
- Multi-Target Tracking
- Track While Scan (TWS)
- Real-Time Target Processing
- Situational Awareness Generation



Electronic Protection Features

GPS/GNSS Protection

Detection of navigation signal anomalies and spoofing attempts.

RF Jamming Detection

Real-time identification of electronic attack and jamming activity.

Advanced Anti-Jamming

Adaptive beamforming and null steering techniques improve performance in contested RF environments.

Environmental Specifications

Parameter	Specification
Operating Temperature	Up to -40°C to +70°C (optional configuration)
Environmental Protection	Up to IP67 (optional configuration)
Cooling	Passive or Forced-Air Cooling
Deployment	Fixed Site / Mobile Platform / Rapid Deployment

Fire Control Radar Capability



The AERIS-10X CUSTOM architecture can be optimized for high-precision target tracking applications.

Capabilities include:

- High Angular Accuracy
- Continuous Target Tracking
- Simultaneous Search and Track
- Fire Control Radar Integration
- Target Engagement Support

Applications

Counter-UAV Systems

Detection and tracking of unmanned aerial systems.

Critical Infrastructure Protection

Airports, ports, industrial sites, energy facilities, and strategic assets.

Border Surveillance

Persistent monitoring of large operational areas.

Maritime Surveillance

Monitoring and tracking of maritime traffic.

Defense & Security

Situational awareness and tactical surveillance operations.

Research & Development

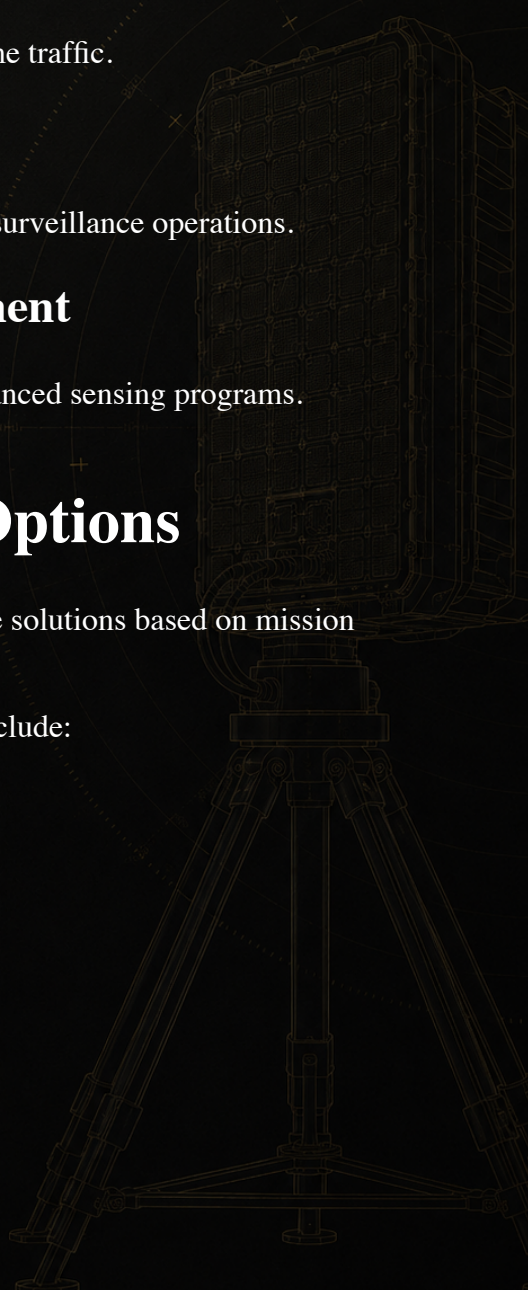
Universities, laboratories, and advanced sensing programs.

Customization Options

ABAC Industry offers configurable solutions based on mission requirements.

Available customization options include:

- Detection Range
- Antenna Size
- AESA Architecture
- Environmental Protection Level
- Cooling System
- Communication Interfaces
- Tracking Algorithms



- Software Features
- Deployment Configuration
- Integration Requirements

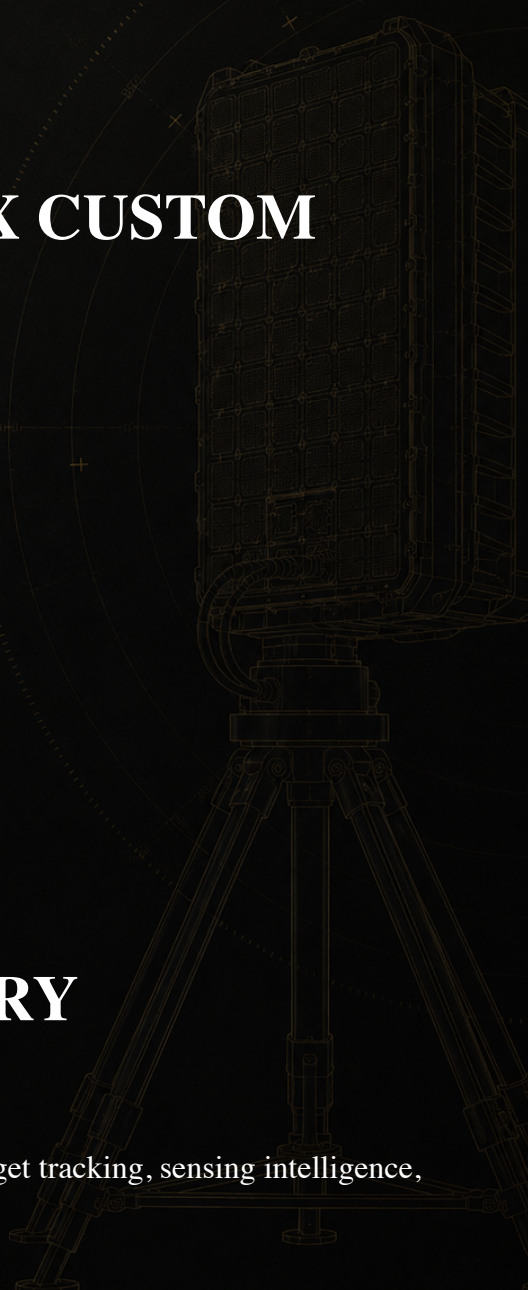
Why AERIS-10X CUSTOM

- ✓ True AESA Radar Technology
- ✓ Electronic Beam Steering
- ✓ High-Power GaN Architecture
- ✓ FPGA-Based Signal Processing
- ✓ Advanced Electronic Protection
- ✓ Modular Design
- ✓ Mission-Specific Customization
- ✓ Open Integration Platform
- ✓ Scalable Detection Range

ABAC INDUSTRY

Advanced Sensing Technologies

Building next-generation radar, target tracking, sensing intelligence, and situational awareness systems.



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