

Vixen 500E Active Electronically Scanned Fire Control Radar

SELEX Sensors and Airborne Systems (SELEX S&AS) has been at the forefront of the airborne radar market since the 1950s when the AI23 radar became the world's first high power monopulse radar to enter squadron service. To maintain its leading position in the market, SELEX S&AS has been developing Active Electronically Scanned Array (AESA) technology since the early 1990s.

Vixen 500E is a compact, lightweight, active electronically scanned array radar for Fighter and Lead In Fighter Trainer aircraft. Building on over 50 years of fire control radar experience Vixen 500E delivers greater performance and higher reliability than comparable mechanically scanned radars.

EASE OF INSTALLATION

Vixen 500E comprises two main Line Replaceable Units (LRUs), easing installation and reducing the systems volume. Vixen 500E does not require any interconnecting waveguides, therefore making the radar installation a quick and simple procedure.

OBSOLESCENCE PROTECTION

The impact of future obsolescence arisings is minimised by the use of Commercial Off The Shelf based processor cards with an open and expandable architecture and a software abstraction layer. This design enables hardware to be replaced without significantly impacting the radar software.

CAPABILITY

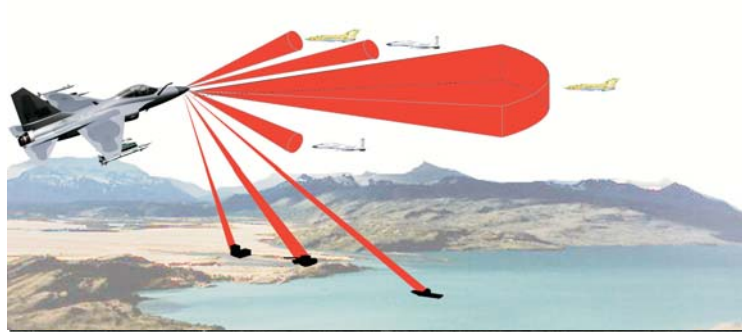
Vixen 500Es highly flexible Direct Digital Synthesis generated pulse compression waveforms support optimised performance in all modes of operation. Vixen 500E has been designed to meet the full spectrum of fire control radar operational requirements, detecting, identifying, prioritising and engaging targets, whilst remaining resistant to radar countermeasures.



Fighter aircraft active electronically scanned array radar

KEY BENEFITS

- Low cost of ownership
- Superior performance
- Superior reliability
- Software driven
- Easy to install
- Easy to use
- Mode interleaving
- No waveguides
- Electronic Beam Steering
- Beyond visual range weapons compatibility



Vixen 500E delivers a broad range of air-ground, air-air and air combat capabilities



Synthetic Aperture Radar (SAR) imagery

TECHNICAL SPECIFICATIONS

| | |
|---------------|------------------------|
| Frequency | X band |
| Scan coverage | > ± 60° |
| Scan velocity | Instant beam switching |
| MTBcF | > 1000hrs |

Modes available

| | |
|---------------------------------|--|
| Air to Surface modes | Real Beam Ground Map Sea Surface Search and Track Synthetic Aperture Radar Mapping (Standard and Fine) Beacon interrogation Freeze Mode Air to Ground Ranging |
| Ground Moving Target Indication | Inverse Synthetic Aperture Radar imaging |
| Air combat modes | Sleuable Scan Vertical Scan HUD Search Boresight |
| Air-to-Air modes | Single Target Track Track While Scan Range While Search - look up - look down Velocity Search |
| Interleaved modes | A number of situational awareness modes |

Key Parameters

| | |
|-------------------------|--------------|
| Track While Scan | > 10 Targets |
| SAR Resolution | < 3 m |
| Track Formation Range | > 25 nm |
| Look Up Detection Range | > 35 nm |

RELIABILITY

The Vixen 500E radar minimises the impact of transmitter and receiver failure by using many solid state transmit receive modules within the fixed array. As a result, component failures within the array result in graceful performance degradation rather than complete system failure, therefore delivering high operational availability when compared with conventional, mechanically scanned radar systems.



Common Commercial Off The Shelf (COTS) Processor