

Flat Panel Array
Solid State Amplifier
Receiver & Processor

NEMESIS

TAILOR-MADE MECHANICALLY
SCANNED ARRAY (MESA) RADAR

F-5E Tiger II Photo by Chen Peng

The Nemesis is a custom-tailored airborne RADAR designed to conform to your aircraft's space and power requirements. With budget constraints in mind, DSI can integrate the Nemesis radar without costly aircraft modifications, all while providing a very capable radar solution.

Nemesis RADAR was designed by taking the best and most current technology available and pairing it with the knowledge of U.S. Navy Top Gun and U.S. Air Force Weapons School instructors. By leveraging the knowledge gained by thousands of hours of tactical flight operations by these pilots, the Nemesis RADAR has captured the lessons learned of pilot behavior and interface to provide performance comparable to 4th and 5th Generation Aircraft.

THE NEMESIS ADVANTAGE IS MEANT TO SUPPLY A RADAR SOLUTION WHICH:

1. Gives pilots the best and most capable solution via cutting edge signals processing techniques
2. Very high mean time between failure
3. Highly sustainable by utilizing COTS and standards based tools
4. Can be integrated with existing and new install mission systems
5. Cost of procurement is fractional compared to other RADAR solutions

- » NEMESIS is a tailor-made Mechanically Scanned Array (MESA) RADAR designed for aircraft that cannot accommodate DSI's full size DELTA RADAR
- » NEMESIS can conform to current aircraft avionics bays, standard rack structure, and can utilize existing power and cooling
- » NEMESIS can employ an array aperture optimized for the current aircraft radome, thus eliminating any costly structural modifications
- » Utilizes a proven X Band Solid State Power Amplifier technology, which provides a higher mean time between failure, higher clutter improvement factor, and lower out of band emissions compared to tube-based amplifiers
- » DSI's Receiver / Processor LRU, also installed in the DELTA RADAR, utilizes modern processing technology to optimize RADAR performance
- » NEMESIS upgrades and retrofits eliminate any obsolescence or supportability issues
- » Fully supportable with DSI's ARTES ATE and our proven depot-level repair expertise spanning four decades



MECHANICALLY SCANNED ANTENNA

- » Custom designed antenna solutions in 12-16 weeks (27 dBi-38 dBi)
- » Scalable array architecture in X Band
- » Wide bandwidth and high power handling
- » Beam steerable options available
- » Rapid prototyping and final solution builds
- » Fully digital feedback motion control system



SOLID STATE POWER AMPLIFIER

- » Gallium Nitride (GaN) solid-state transmitter: available at multiple power levels to meet desired results and price point
- » Solid State Transmitter provide graceful degradation: no single point of failure so radar can continue to operate.
- » High reliability (MTBCF up to 10X). Mean Time Between Critical Failure increases by magnitudes over a tube-based transmitter.
- » Lower sustainment cost due to less frequent failures and modular design. Up to 90% Reduction in Operation & Sustainment costs versus comparable 4th generation fighter aircraft radar systems
- » High reliability, high-efficiency transmitter leads to greater operational readiness
- » Lower Out of Band Emission to reduce interference from adjacent radar and other transmitters.



RECEIVER / PROCESSOR

- » Adaptive processing and channel analysis
- » Open architecture hardware design (e.g. VPX VITA, AXIe, 802.3, and other standards)
- » Standards-based tools and languages (VHDL, C#, Java, Matlab Coder)
- » Modern processing techniques for legacy platforms
- » Integrated master display and user interface when central computer unavailable
- » User installable application
- » Feature extensions

TECHNICAL SPECIFICATION

Frequency	X Band
Cooling	Air
Weight	50 kg / 110 lbs
Key Interface	Ethernet

MODES AVAILABLE

Air-to-Air Modes	Track While Scan
	Single Target Track
Air Combat	HUD Acquisition
	Vertical Acquisition
	Boresight
Air-to-Surface Modes	Real Beam
	Doppler Beam Sharpening
	Sea Surface Search and Track
	GMTI (Optional)
	Synthetic Aperture Radar (Optional)
Interleaved Modes	Air-to-Surface Ranging
	Customer Configurable
Support Functions	Interleaved Air & Surface Modes
	Passive Search
	While Track Scan
	Missile Datalinks
	Cued
	Non-Cooperative Target Recognition
	ECCM
	Weather Awareness Mode



RADAR & RWR DISPLAY

This fully configurable display provides for multiple radar display formats and tactical views. Utilization with HOTAS, bezel keys, and voice commands allow for multiple user input capabilities.

Multiple view windows may be shifted by the user for maximum situational awareness. Multiple window provisions allow for information and displays from other systems to be hosted by the various view arrangements. Symbology and messages are customizable, and user-defined libraries may be imported for radar and threat libraries.



Ask Us About Our RADAR WARNING RECEIVER

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