

Sea Raider Family of Radars

Notional Capabilities and Strategic Advantages for NGSSR and Small Form Factor (SFF) Variants on USVs









Differentiating Capabilities over Commercial Off the Shelf (COTS) Radars

- High range and bearing resolution
 - Superior to COTS (NGSSR Pedigree)
 - Improved resilience and safety for autonomous operations
 - Target discrimination for differentiating high-value target(s)
- Software Defined Waveform Generation
 - Enables arbitrary waveform generation/transmission to support unique EA or create RF confusion
- Fault Detection/Fault Isolation/Built-In-Test
 - Superior monitoring and embedded health/status and maintenance features that can be remotely viewed
- Anti-Ship Cruise Missile Detection
 - Pushes detection and tracking ranges out beyond horizon for surface combatants and/or carrier/L-class HVU
 - Increases time for tactical assessment hard-kill/soft-kill decision point
- EMCON Mode (Classified)
 - Significant tactical advantage
- UAS/Helo Detection
 - Decreases time to detect and discriminate small RCS UAS for tactical prosecution via symmetrical munitions
 - Enhanced detection and tracking via sensor fusion in swarm
- Commonality and Interoperability with NGSSR on surface combatants
- Capability to maintain Positional Awareness and Navigation in GPS denied environments
- Cyber hardened to USN Surface Fleet Requirements
 - Ensures resilience in denied environments

Technical Specification

Comparison of System Sizes and Capabilities for NGSSR and SFF Variants on USVs

	Medium USV Variants Under 45' Vessels	Medium USV Variants 45-190' Vessels	Large USV Variants 200-300' Vessels
			
Solution	Small 24" Enclosed Array	Medium 4' Open Array	Full NGSSR 8" Array in Radome
Capabilities			
Size, Weight and Power	<50lbs above deck; 1/2 rack below deck	~100-150lbs above deck; 1/2 rack below deck	~550lbs above deck; full rack below deck
Shock/Env/EMI	Grade B/810G/461, 464	Grade B/810G/461, 464	Grade A Shock/810G/461, 464
High Range Bearing Solution	Exceeds COTS (~10')	Exceeds COTS (~10')	Exceeds COTS (~1')
FD/FI/BIT Monitoring	✓	✓	✓
EMCON Mission	✓	✓	✓
ASCM Detection/Tracking		✓	✓
UAS/Helo Detection/Tracking	✓	✓	✓
Fire Control Quality Surface Tracking			✓
PDD			✓

