



FULL DIGITAL MULTIFUNCTION AESA D-BAND NAVAL RADAR FOR BALLISTIC MISSILE DEFENCE AND SURVEILLANCE

KRONOS® Power Shield is a D-Band Multifunction AESA Radar designed for Naval Early Warning Tactical Ballistic Missile Surveillance and Defence.

Forming part KRONOS Family of radars, the key feature of the KRONOS Power Shield architecture is its Fully Digital Antenna based on technology already proven through in-service Active Electronically Scanned Antenna (AESA) Multifunction Radars.

The core block of the digital antenna is the DAT, Digital Active Tile, which implements a full radar chain for each single radiating element, starting from the Waveform Generation up to the broadband ADC.

More than 1000 radiating elements grouped in DATs provide a completely distributed architecture controlled at single element level. This brings increased performance, new functionality and the ability to implement a wide range of radar scanning architectures required to cover the various operating requirements for today and tomorrow.

KRONOS Power Shield is the Early Warning Radar selected for the new Ballistic Missile Defence (BMD) fleets of the Italian and Qatar Emirates Navies.

ONE SENSOR FOR FULL BALLISTIC MISSILE DEFENCE

KRONOS Power Shield covers the full spectrum of BMD capabilities that modern complex scenarios require for an Early Warning Radar (EWR).

Tactical Ballistic Missile Defence

High data rate and excellent detection accuracy for a timely cue of descending phase Tactical Ballistic Missiles (TBMs) for area defence.

Tactical Ballistic Missile Surveillance

Very extended range for wide area surveillance and Early Warning Initiation of ascending phase TBMs
Mission flexibility to support Tactical Picture Updating or cueing to FCR for self-reaction against ABT and TBM threats.

KRONOS® POWER SHIELD

KEY FEATURES

- New generation of software defined radar
- Full Digital Rx
 - Full band ADC at single element level
- Full Digital Tx
 - Waveform generation at single element level
- Excellent tracking accuracy thanks to bi-dimensional digital monopulse based on single element input
- High Range Resolution (Wide Band) to discriminate TBM Booster from TBM Re-entry Vehicle
- Advanced ECCM capabilities and Clutter/Multipath suppression by means of Adaptive Digital Beamforming (ADBDF)
- Stared antenna operation for radar performance extension

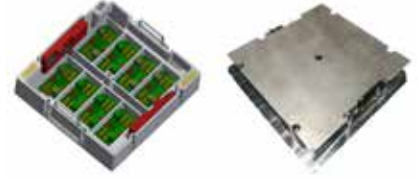
TECHNICAL SPECIFICATION

GENERAL	
Radar type	Multifunctional, Full DBF
Antenna type	AESA GAN technology
Frequency band	L/D 1.215-1.400 GHz
Antenna rotation	15rpm (4sec scan time)
Search volume	360° or in a sector
IFF antenna	Co-mounted
Electronically scanned	(±45°, 0 to 90°)
Rotating and Stared Mode	
Minimum range	2 km
Simultaneous track	>1000
Update time	4 sec rotating 1 sec stared
Elevation coverage	70° search 90° tracking
Instrumented Range	400km ABT 1500km TBM
Weight (Above Deck)	7 Tons
Cooling	Liquid cooled
Maintenance	Completely indoor
Status	Under Contract

DIGITAL ACTIVE TILE - NEXT GENERATION FULLY DIGITAL AESA RADAR

DIGITAL TRM

- Waveform Generation
- Tx RF Channel
- GaN HPA
- Rx RF Channel
- Full Band ADC



KRONOS INTEGRATION IN BMD SYSTEMS

