



# Doruk 2D Radar

Low Altitude Surveillance Radar for Coastal & Land Borders  
Detection and Classification Technology



## DORUK 2D Surveillance Radar

UAV Detection Radar is used for detection of moving ground and maritime targets and low altitude flying targets. Doruk 2D is fully compliant to Vessel Traffic Service (VTS) system radar requirements as defined in IALA Guidelines.

Doruk 2D radars perform detection and classification simultaneously. This TWS (Track While Scan) capability provides angle, range, elevation (for 3D version), RCS (Radar Cross Section), radial velocity and heading of targets with Doppler Processing in radar.

## Precise and State of Art

X-Band Doruk 2D radar detects low RCS slow-moving targets even in strong clutter environments such as rain, snow, desert sand storms and even urban environments. Doruk radars are powered by an X-Band solid state transmitter, and combine the capabilities of pulse compression, Doppler processing and CFAR (Constant False Alarm Rate) algorithms. Doruk radars are operated from a user-friendly open architecture software user interface. All targets are shown realtime on the geographical map with detailed target informations supplied from the modern and reliable tracker algorithms of system.

## DORUK 2D Radar Specifications

Operating Frequency Band	X-Band
Detection (%80 Pd and $10^{-6}$ Pfa)	Small UAV (RCS=0.01 m <sup>2</sup> ) > 6 km Small Boat (RCS=0.5 m <sup>2</sup> ) > 12 km Human > 15 km Glider > 20 km Big vehicle, Small Ships > 28 km Mid size aircraft > 40 km
Velocity Detection	0.2 m/sec to 160 m/sec
Elevation Beamwidth (-3 dB)	20 ° (Elevation Center is +- 20 ° adjustable)
Azimuth Accuracy	< 0.5 °
Range Accuracy	< 5 m
Velocity Accuracy	0.2 m/sec to 1 m/sec
Azimuth Coverage	360 °
Scanning Rate	Adjustable, 180 °/sec
Weight	< 69 kg
Dimensions	120 x 500 x 750 mm
Operational Readiness	< 10 min
Operating Temperature	-30°C to +70°C
Storage Temperature	-40°C to +85°C
MTBF	5000 hours
MTTR	< 10 min
Track capacity	300
Antenna Technology	Slotted Waveguide Antenna
Max Power Input Requirement	< 300 watt (Solar panel compliant)



## Robust & Reliable

With high MTBF and low MTTR, each Doruk radar is an autonomous system to operate under all-weather and day/night conditions.

## Mobile & Flexible

With its unique design, Doruk radars can be installed and used very easily in every environment. Doruk radars can be integrated to any type of vehicle such as car, truck, trailer fast and easy, as their software and hardware interfaces are industry standard.

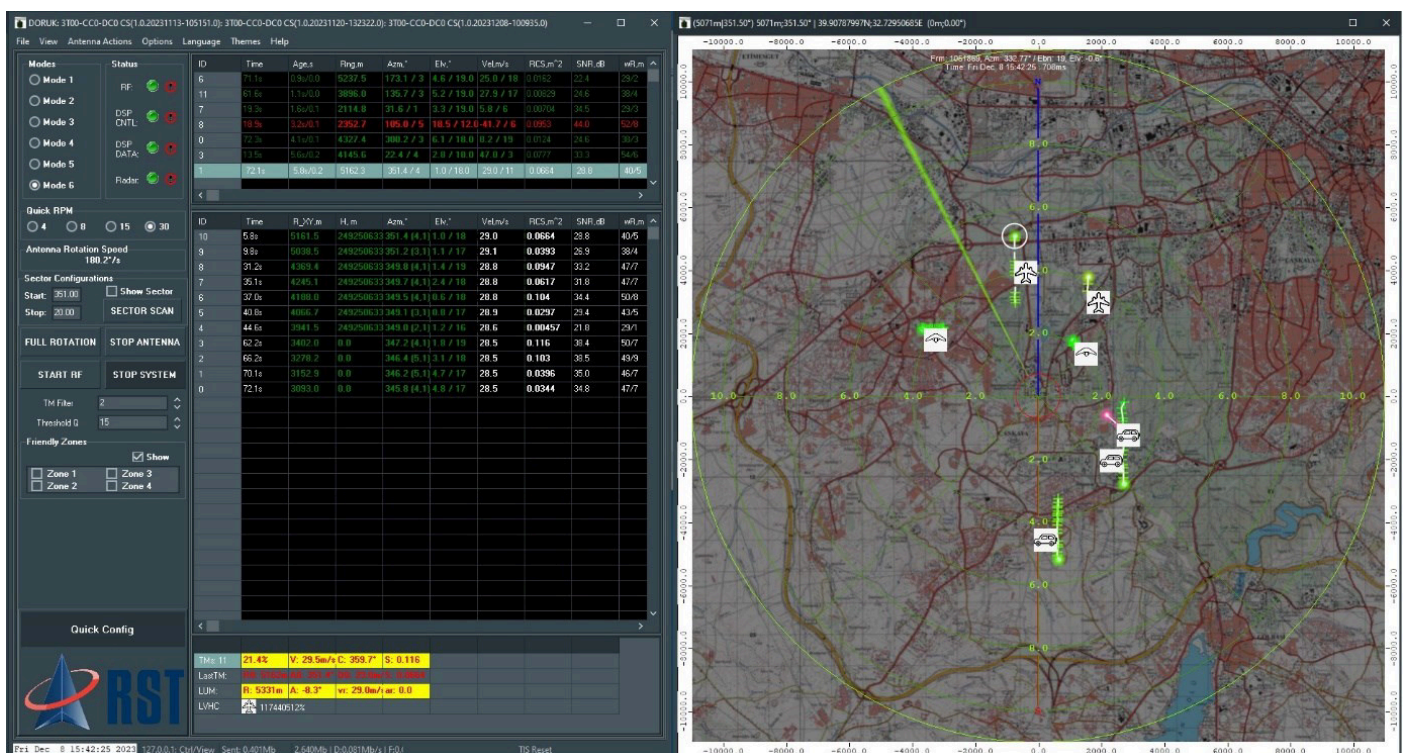
## Coastal and Land Border Surveillance Radar Software

Radar Navigation Display is compatible with all map formats, from naval and air traffic control maps to all military and free maps. All inland sea areas and coastal regions will be shown with friend/foe details on map. Also capability to connect to thermal/low light cameras, soft kill jammers and hard kill weapons are included in system.

Up to 10 operator laptops can be connected to each radar via internet in real time. Also up to 200 radar

sensors can be connected to a control center via standard interface. Also radar track and control inputs and outputs can be integrated to a user command control application, or any kind of (W)ECDIS.

Each radar targets up to 300 real-time tracks. Radar targets and identification details such as patrol boat, big ship, vehicle, drone, talon, aircraft, personnel are shown on map with corresponding icons.



# Radar Software Capabilities

- Detection of moving ground and maritime targets and low altitude flying targets
- Target Classification with Advanced Mathematics and AI (Artificial Intelligence)
- Track While Scan capability
- Provides angle, range, elevation (for 3D version), RCS (Radar Cross Section), radial velocity and heading of targets with Doppler Processing
- Target Tracking over map (User selected maps are added easily)

State of the art one box system : No waveguide, no cable loss

MIL-STD Design and Production : From desert/tropical climates to snow

Electronic Protection (ECCM) : Frequency Hopping Radar (anti-jamming)

LRU based design : No Specialised Maintenance Training

Super light weight : Total weight around 60 kg.

Operate onboard vehicle : Integrated to mast, auto north/heading

Single Laptop Operation : Operator uses a single rugged laptop

## Optional Antenna Types

Doruk 2D – 1 meter antenna (Fan pattern)



Doruk 2D – 3 meter antenna for 0.5° resolution (Fan or cosec pattern)

