

Advanced 3D tactical air defense and anti-UAV radar

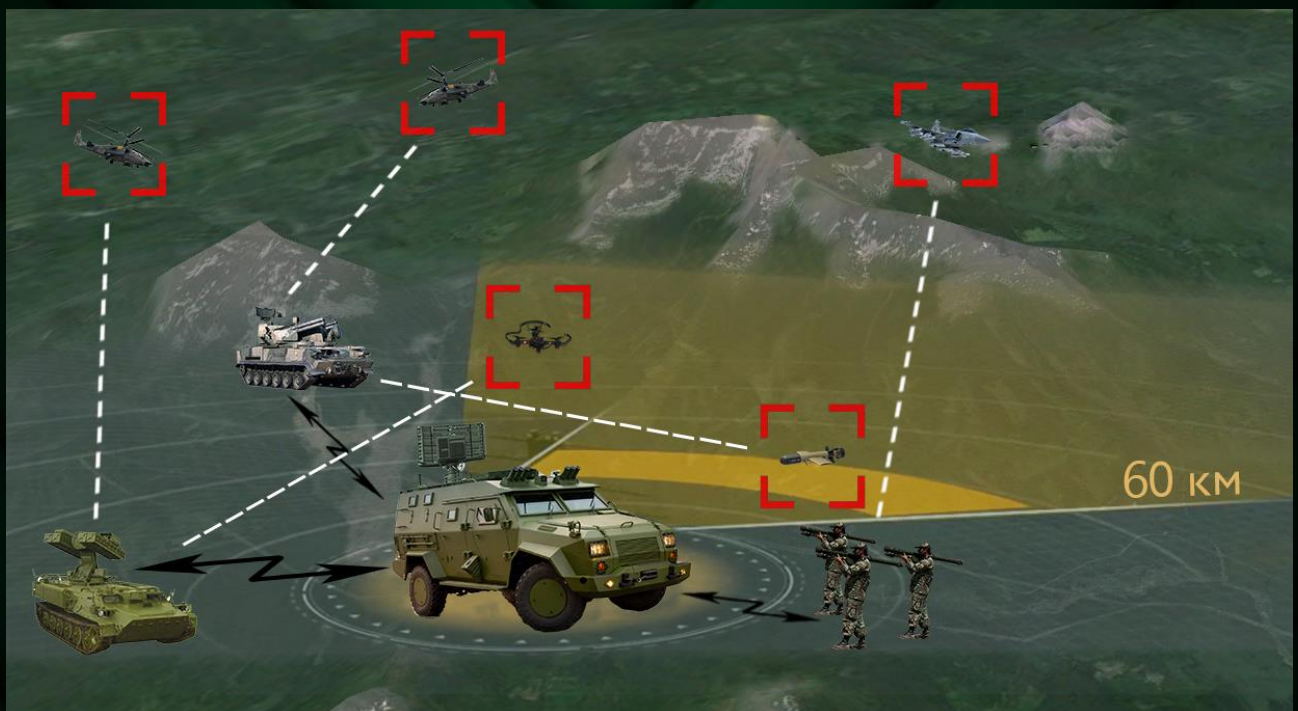
(with capability of target tracking in monopulse mode)

SE-50.3D

SE-50.3D - new generation of 3D Tactical Air Defense Radars made by Sky Engineering reflects experience in tactical military radars manufacturing.

This 3D radar detects different types of flying platforms, including low level high-speed fighter aircrafts, hovering helicopters, UAVs and other low level high-speed objects.

The radar provides accurate range, azimuth and elevation angle measurements for each target and route of objects.



SE-50.3D can be operated as a local Air Defense System providing warning and target designation to surface-to-air weapon systems, including MANPADS.

In addition, it can be also deployed as gap filler for supporting C3I centers for Air Traffic Control.

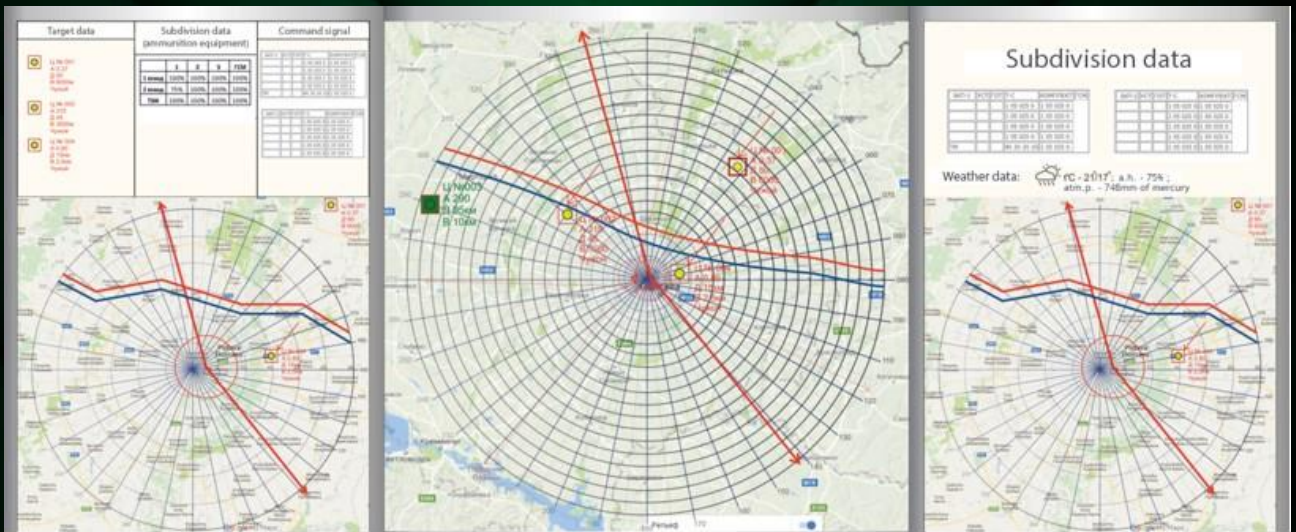
Radar is able to make target autotracking in monopulse mode, to give high accuracy target coordinates, to provide weapon system control.

Radar has got high degree of antijam performance caused by low power and digital signal processing. The signal emission frequency changes in each impulse and in large frequency band, that provides higher protection level against clutter-removing system.

SE-50.3D

Features

- Automatic detection of airborne targets
- Track while scan up to 500 targets
- Operates 24/7 under all weather conditions
- Targets differentiation and classification
- Interoperability with surface-to-air weapon system
- Several radars can be fused into one integrated air surveillance picture
- Low weight and low power consumption (1 kW)
- Extensive BIT
- High MTBF and low MTTR
- Easy to operate PC-based control unit and display
- Standard power source
- Fast and easy deployment
- Target autotracking in momopulse mode



Operator display

Specification

Operating band: X-band
Max amount of tracking targets: 500
Detection range: 0,1-60 km
Fighter aircraft/helicopter: up to 50 km
UAVs: up to 10 km
Range accuracy: 15 meters
Azimuth accuracy: $<0,1^{\circ}$
Elevation accuracy: $<0,1^{\circ}$
Power requirements: up to 1 kW
Operational temperature: from -40°C till $+60^{\circ}\text{C}$

Installations

- On the vehicle
- On the automobile trailer
- On the building roof

SE-50.3D

Radar Type	Pulsed Doppler Radar with digital beamforming and mechanical scanning in azimuth
Radar modes	3D Air Surveillance, Track While Scan, Monopulse Tracking
Frequency	X-band
Bandwidth	400 MHz
Operational Range	0,1...60 km
Elevation coverage	65 ⁰
Azimuth coverage	360 ⁰
Detection and tracking performance	50 km for targets with RCS=1 m ²
Output products	Targets range, Azimuth, Elevation, Velocity, Doppler velocity, Trajectory
Range measurement accuracy	<15 m
Elevation and azimuth measurement accuracy: in surveillance and TWS modes in monopulse mode	<1 ⁰ <0.1 ⁰
3D Coverage Rate	12, 18, 24 rpm
Maximum number of tracked targets	500
Transmitter type	Solid-state integrated in the antenna
Frequency agility	Yes
Pulsed transmit power	300 W
Averaged transmit power	100 W
Transmit signal	Pulse FM
Transmitter antenna beam pattern	Fan-like beam of 1.8 ⁰ x 65 ⁰
Receiver antenna pattern	32 simultaneous digital beams
Antenna stabilization	Electronic
Digital receiver	32 channel digital receiver, Sampling rate of 500 MHz and 12 bit resolution per channel
Signal processing algorithms	Digital beamforming, Pulse compression, Doppler processing, CFAR algorithms, Kalman filtering, Target classification support
Power supply	800 W (max)
Operation frequency range	-400C to +600C