

39N6E KASTA-2E2

Low-Altitude 3D All-Round Surveillance Radar

Mission

The Kasta-2E2 low-altitude 3D all-round surveillance radar is designed to control airspace and to perform automatic detection, range/azimuth/altitude measurements and flight path characteristics of fixed-wing and rotary-wing aircraft, unmanned aerial vehicles and cruise missiles, including low-flying, terrain-hugging and stealth ones, in conditions of intensive clutter reflections from a background surface, local objects and weather formations.

The Kasta-2E2 mobile automated solid-state low-altitude radar can be integrated into various military and civil-purpose systems used for air defence, coast and border control, air traffic control and air operations control in aerodrome zones.

Features

The radar features modular design with a solid-state emitter, digital data processing and automated operation, built-in functional testing system, a 14-m antenna tower to detect very low-flying air targets, high degree of immunity to interference from neighbouring electronic assets when operating in close formations (protection rate – up to 50 dB).

Composition

The Kasta-2E2 radar comprises a hardware vehicle, an antenna vehicle, a diesel-electric power plant mounted on all-terrain wheeled chassis; two single-axle trailers carrying auxiliary equipment; a remote workstation enabling radar control from a distance of up to 300 m.

The radar can detect small-size targets, including low-speed ones, at great distances. It is a jam-immune, reliable, easy and safe to operate and maintain asset that can be shipped by various transportation means.

At customer request, a containerised radar variant can be supplied to operate with its antenna mounted on an Unzha-type mast.



Basic specifications

Waveband	decimetric
Coverage area:	
range, km	5 - 150
elevation, deg	25
azimuth, deg	360
altitude, km	6
Target detection range, km (antenna tower height = 14/50 m, RCS = 2 sq.m):	
at 100 m	41/55
at 1,000 m	95/95
Coordinates measurement accuracy:	
range, m	100
altitude, m	900
azimuth, ang. min	40
Clutter rejection ratio, dB	54
Number of target tracks	50
Mean time between failures, hrs	700
Deployment/out-of-action time, min	20
Power consumption, kW	23
Continuous operation time, days	not less than 20

KASTA-2E

Radar



Mission

The Kasta-2E radar is designed to control airspace and to measure range and azimuth of air targets, such as fixed- and rotary-wing aircraft, unmanned aerial vehicles and cruise missiles, including those flying at low and very low altitudes, in conditions of intensive clutter reflections of underlying terrain, local objects, and meteorological formations. The radar is capable of detecting stealth air targets.

The Kasta-2E mobile solid-state low-altitude surveillance radar can be employed in various military and civil-purpose systems used for air defence and air force systems,

coastal defence and border guard security, air traffic control, and airspace control over airfields.

Features

- modular design of radioelectronic equipment with a solid-state transmitter
- digital data processing
- built-in functional test equipment
- capability to operate with an organic aerial system (7m high) or a transported aerial mast (50m high)
- ability to control the radar from a remote operator post

Composition

- equipment vehicle with radar equipment
- antenna vehicle with a standard rotating antenna unit, the AD-30 autonomous diesel electric power unit and external power source frequency converter
- standby AD-30 diesel electric power generator in a single-axle support trailer
- remote control post which can be carried away from the radar to 300 m

The radar boasts high range of detection of small-size low-altitude targets, including low-speed ones, as well as high jamming immunity. It is an efficient and reliable system, safe and convenient to operate, and simple to maintain. The radar can be transported by various transportation means.

Basic specifications

Waveband	decimetric
Coverage area:	
range, km	5 - 150
azimuth, deg	360
altitude, km	up to 6
Target detection range (antenna tower height = 14/50m, target RCS = 2 sq.m), km:	
at 100 m	32/53
at 1,000 m	95/105
Coordinates measurement accuracy:	
range, m	300
azimuth, ang. min	70
Clutter rejection ratio, dB	53
Mean time between failures, hrs	300
Deployment/out-of-action time, min	20
Continuous operation time, days	not less than 20

9S15MV3

Mobile 3D All-Round Surveillance Radar

Mission

The 9S15MV3 mobile 3D all-round surveillance radar is designed to detect and identify any aerodynamic target as friend or foe, as well as tactical ballistic missiles, and to transmit target track data and bearings to enemy jammers to the command post via encrypted radio or cable communications channels.

The all-round surveillance radar is employed as part of the target acquisition and designation unit of the S-300V ADMS and radar posts of land forces' air defence units.

Composition

- antenna post based on a planar waveguide array, with electronic scanning in elevation and mechanical - in azimuth
- transceiver
- ground-based IFF interrogator
- data processing and control equipment, including integrated digital computer, automated work-stations fitted with air situation displays, diagram-cueing displays, and controls

Features

- waveguide array antenna
- high jamming immunity
- high mobility and self-sustained combat operation capability, which is achieved thanks to the radar components mounted on a cross-country tracked chassis and integrated power supply system, navigation



and survey instruments and coded data and voice communications systems

- built-in automatic test and malfunction detection system

The radar's electronic equipment is arranged in an armoured hull mounted on the tracked chassis.

The 9S15MV3 all-round surveillance radar provides continuous airspace scanning in the anti-aircraft and anti-missile modes of operation.

Basic specifications

Waveband	centimetric
Radar coverage:	
range (indicated), km	up to 320
altitude, km	up to 50
azimuth, deg	360
elevation, deg	up to 55
Scan cycle (depending on operational mode), sec	6 - 18
Data throughput, tracks per scan cycle	up to 250
Crew	4

9S19M2

Sector Scanning Radar

Mission

The 9S19M2 sector scanning radar is designed to detect and identify aerodynamic targets designated by the command post in heavy clutter and ECM environment, as well as to detect and track high-speed small-size ballistic targets (theatre/tactical and air-launched ballistic missiles), and to feed target data (blips or tracks) to the command post via coded datalinks.

The 9S19M2 mobile 3D sector scanning radar is employed as part of the target detection and designation subsystem of the S-300V ADMS and radar posts of land forces' air defence units.

It is a high-energy jam-resistant programmed scanning radar featuring a multi-element phased array with a high amplification ratio and 2D electronic beam scanning of the antenna directive pattern.



Composition

- antenna post with a phased array, a transmitter, and an IFF equipment
- equipment compartment with receiving, computing, and data display systems, and control equipment

The radar equipment is housed in the armoured hull mounted on a tracked chassis.

The 9S19M2 sector scanning radar provides continuous airspace scanning in the anti-aircraft and anti-missile modes of operation.

Basic specifications

Waveband	centimetric
Radar coverage:	
range, km	up to 175
azimuth, deg:	
anti-missile mode	±45
anti-aircraft mode	±30
elevation, deg:	
anti-missile mode	from 30 to 73
anti-aircraft mode	from 0 to 50
Scan cycle, sec	12.5-14
Number of ballistic targets tracked simultaneously	up to 16
Rate of target updates fed into the CP, sec	1 - 2
Crew	4

9S18M1-1

Target Acquisition/Designation Radar



Mission

The 9S18M1-1 target

surveillance radar based on the planar waveguide array antenna, providing electronic scanning in elevation and mechanical - in azimuth, transceivers, display system, ECCM system, digital computer, and IFF system.

The TAR also incorporates secondary radar data processing system, coded datalink and combat command communications systems, as well as life support, survey and relative orientation assets.

The radar's electronic equipment is arranged in the armoured hull mounted on the tracked chassis.

acquisition/designation radar system is designed to detect targets, to identify them as friend or foe, to process and transmit to the command post target radar data (blips and bearings) on hostile jammers.

The mobile 3D target acquisition radar system is part of the Buk-M1 ADMS. It can also operate autonomously as an all-round surveillance radar.

Composition

The radar system comprises an all-round

Basic specifications

Waveband	centimetric
Radar coverage:	
azimuth, deg	360
elevation	
in anti-missile/anti-aircraft mode, deg	55/40
Detection range, km	160
Scan cycle, s	4.5 and 6



Mission

The Rezonans-N radar is a mobile highly automated coherent all-round surveillance phased-array radar employing the resonance wave reflection effect in the metric wavelength band. It is designed to monitor airspace, to acquire, identify and measure with high accuracy co-ordinates and flight characteristics of a wide range of existing and prospective air targets at long ranges and high altitudes, including low-observable cruise and ballistic missiles and hypersonic aircraft, as well as stealthy ones, in severe jamming and clutter environment, as well as to be used within automated/non-automated command and

REZONANS-N

Stealth Air Target Early Warning Radar

control systems, non-strategic missile defence systems, rapid deployment assets, and in various military/civil-purpose applications.

Basic specifications

Wavelength band	metric
Radar coverage:	
range, km	10-1,100
altitude, km	up to 100
azimuth, deg	360
elevation, deg	1.5-80
Fighter detection range, km	350
Coordinates measurement accuracy, at least:	
range, m	300
elevation, deg	1.5
azimuth, deg	1.5
speed, m/s	1-1.5
Data update cycle, s	1-10
Number of tracked targets	up to 500
Mean time between failures, hrs	1,500