Vostok-3D

solid-state combination VHF- and S-band 3D radar

Designation

Detection, determination of azimuth, range, flight altitude and speed, tracking and classification of aerial platforms (AP), transmission of radar information to an automated control system.

Capabilities

- detection and tracking of APs over up to 360 km ranges, within 360 degrees in azimuth and from minus 3 to 45 degrees in elevation;
- automatic measurement of primary coordinates — range, azimuth and range rate by the VHF-band channel; and azimuth, range and elevation by the S-band channel;
- automatic classification of the tracked APs;
- three-channel automatic jamming cancelers suppressing the VHF- and S-band antenna system sidelobes, clutter rejection and anti-spot jammer systems;
- digital signal shaping and processing using state-of-the-art highly effective algorithms;
- continuous functional check of all devices of the radar with identification of faults down to standard replaceable element;
- automated radar travel-to-combat and combat-to-travel transfer procedure;
- all radar hardware including autonomous power supply equipment is mounted on a single self-propelled high cross-country capacity chassis.

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Specifications

Working frequency bands	VHF, S
Maximum operation range	360 km
Primary coordinates and parameters measured	azimuth, range, elevation, range rate
Resolution:	
range	200 m
azimuth	5.5˚
elevation	1.2˚
range rate	10 m/s
Root mean square error of single measurement (single scan):	
range	25 m
azimuth	0.8˚
elevation	0.1˚
Probing signal types	8
Jamming rejection factor	≥30 dB
Clutter rejection factor	≥50 dB
Target info update rate (for fixed antenna	10 s for 3 rpm
system rotation rate in azimuth)	5 s for 6 rpm
Automatic AP tracking system throughput	
capacity, tracks	minimum 250
Automatic J tracking system throughput	
capacity, tracks	minimum 10
AP classification	5 classes
Setup (teardown) time	maximum 8 min

BELVNESHPROMSERVICE
2 Kazintsa str., 220099, Minsk, the Republic of Belarus
Tel.: +375 17 2190708, fax: +375 17 3981887
E-mail: reception@bvpservice.by
Web: www.bvpservice.by