

RANGER® R20SS-3D-XR

Air and Ground Drone Surveillance Radar

APPLICATIONS

UAS DETECTION

BORDER SECURITY

AIRPORT SECURITY

FORCE PROTECTION

VEHICLE DISMOUNT

CRITICAL ASSETS

PROTECTION



The new Ranger® R20SS-3D-XR detects micro UAS targets to 3 km and more, pedestrians up to 8 km out, and light vehicles up to 15 km out. Scan mode options include fixed sector and alternating sectors with an optional pan-tilt mount for a full 360°. For optimal performance, a 4-panel option is offered that can provide a 2-Hz refresh rate on a full 360 degree azimuth coverage. Fast 2-Hz refresh improves detection and tracking of micro drones. AI based automatic target classification greatly filters out unwanted targets and focuses on potential threats.

Both the Ranger® R20SS-3D-XR and the Ranger® R20SS-3D have the vertical coverage, low minimum detection velocity and algorithms to detect and track up to 512 threats simultaneously, including drones, while mitigating bird detections. They can monitor the coverage area two times per second, running 24/7, detecting ground and aerial threats in virtually any climate, day and night. Their low weight, ruggedness, and ease of integration in Command and Control systems make them an ideal candidate for cost-effective C-UAS solutions.

FEATURES

FULL PERIMETER PROTECTION

Wide 40° beam elevation provides complete hemispherical detection of virtually every land and aerial target, including micro UAS. With the pan/tilt mount or the 4-panel option, it covers 360°.

TARGET CLASSIFICATION

Mitigates bird false alarms and informs the operator if the target is a person, vehicle, UAS, bird, aircraft or unknown.

INTEGRATION WITH OTHER SENSORS

Reports target elevation and allows automatic slew-to-cue of cameras and countermeasures.

FAST, ACCURATE THREAT DETECTION

Quickly detects one or up to 512 ground and airborne threats simultaneously while accurately displaying each target's location and elevation – whether it's alone or part of a drone swarm.

SPECIFICATIONS

	R20SS-3D-XR	R20SS-3D
Instrumented range	15,000 m	15,000 m
Detection Range		
Person	8.0 km	5.0 km
Light Vehicle	15 km	11 km
Large Vehicle	15 km	15 km
Micro UAS	3.1 km	2.0 km
DJI Phantom™ 4*	4.0 km	2.5 km
Mini UAS	5.6 km	3.5 km
Small UAS	9.8 km	6.3 km
Minimum Detection Range	40 m	20 m
Scan sector	± 45° (fixed) - 360° with P/T or 4-panel option	± 45° (fixed) - 360° with P/T or 4-panel option
Vertical coverage	≥ 45°	≥ 40°
Number of simultaneously displayed tracks	Up to 512	Up to 512
Electronic scan rate	2-Hz	2-Hz
Minimum Detection Velocity (MDV)	< 0.1 m/s	< 0.1 m/s
Accuracy		
Range Accuracy	± 3 m	± 3 m
Angular Accuracy (azimuth)	< 0.5 degree	< 0.5 degree
Angular accuracy (elevation)	< 2 degrees	< 2 degrees
Power		
Power consumption	225 W nominal	225 W nominal
Operating voltage	21 - 48 VDC	21 - 48 VDC
Overview		
Size (in)	29.6" x 14.7" x 6.0" (75 x 37 x 15 cm)	29.6" x 14.7" x 6.0" (75 x 37 x 15 cm)
Weight	≤ 40 lbs (18 kg)	≤ 39 lbs (17.5 kg)
Operating frequency	X-Band	X-Band
Connectivity	Ethernet	Ethernet
Environmental	MIL-STD-461G, IP67, MIL-STD-810H, FCC/CE, UKCA	MIL-STD-461G, IP67, MIL-STD-810H, FCC/CE, UKCA
Other Features		
Built-in GPS	Yes	Yes
Built-in compass	Yes	Yes



*DJI Phantom™ is trademark of DJI.

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