



CR-PX16B

X-Band Long-Range Pulse-Doppler Phased Array Radar

Technical Specification



Image for reference only. Finish color can be customized on request, e.g. desert tan, tactical gray, or camouflage patterns.

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Version	Date	Description
V1.0	2025-10-18	Initial version.
V2.0	2026-03-16	Specifications updated to the latest production configuration; packing list added.
V3.1	2026-05-20	Product images and document structure revised; maintenance, transportation and service sections added; minor editorial corrections.



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1 Product Overview

The CR-PX16B is a new-generation X-band long-range phased array radar built on an all-solid-state, fully coherent, pulse-Doppler architecture, providing all-weather detection and early warning of low, slow and small (LSS) targets at ranges beyond 8km (RCS 0.01m², drone).

Combining two-dimensional electronic scanning with mechanical scanning, it delivers full-airspace coverage with dual target-recognition algorithms based on track features and micro-Doppler technology, reporting three-coordinate target parameters together with target type classification.

A built-in inclinometer and GPS north finding provide automatic angle compensation and north alignment, and rotation speed and elevation scan coverage are configurable. The large-aperture platform suits wide-area low-altitude surveillance and counter-UAS command-and-control networks.



2 Main Functions

Detection & Coverage

- One-dimensional mechanical scan plus one-dimensional electronic scan, and full 2D electronic scan modes provide 360° airspace coverage and priority-sector surveillance, switching flexibly without any software change;
- Three-coordinate target reporting with position parameters (range, azimuth, elevation, velocity) and target type classification;
- Rotation speed and elevation scan coverage are configurable.

Tracking & Classification

- Mechanical-scan stare tracking and electronic-scan TAS tracking;
- Dual target-recognition algorithms based on multiple track features and micro-Doppler technology.

Deployment & Operation

- Machine learning adapts to the site environment — the radar works on installation with no parameter tuning;
- Built-in inclinometer and GPS north finding provide automatic angle compensation and north alignment;
- Target log recording with historical data playback.



3 Technical Specifications

3.1 Basic Performance & Accuracy

Item	Parameter
Frequency band	X band (9.2GHz ~ 9.8GHz)
Detection range	≥8km (RCS 0.01m ² , drone)
Blind zone	≤150m
Operating mode	Mechanical scan + 2D electronic scan
Search coverage	Mechanical: azimuth 0°~360°, elevation 0°~60° (mission configurable); electronic: azimuth -45°~45°, elevation 0°~60° (mission configurable)
Tracking	Mechanical-scan stare tracking / electronic-scan TAS
TAS tracked targets	≥6
Minimum detection altitude	≤10m
Velocity range	1m/s ~ 100m/s
Update rate	TWS ≤5s (mechanical) / ≤4s (electronic) (elevation coverage 30°, range 10km); TAS ≤0.5s (default)
Search accuracy (RMS)	Range ≤10m, azimuth ≤0.4°, elevation ≤0.5°
Tracking accuracy (RMS)	Range ≤10m, azimuth ≤0.3°, elevation ≤0.4°
Target capacity	≥500 targets

3.2 Electrical Interface

Item	Parameter
Communication	RJ45 Ethernet
Power supply	DC24V interface / AC220V converter
Power consumption	≤650W

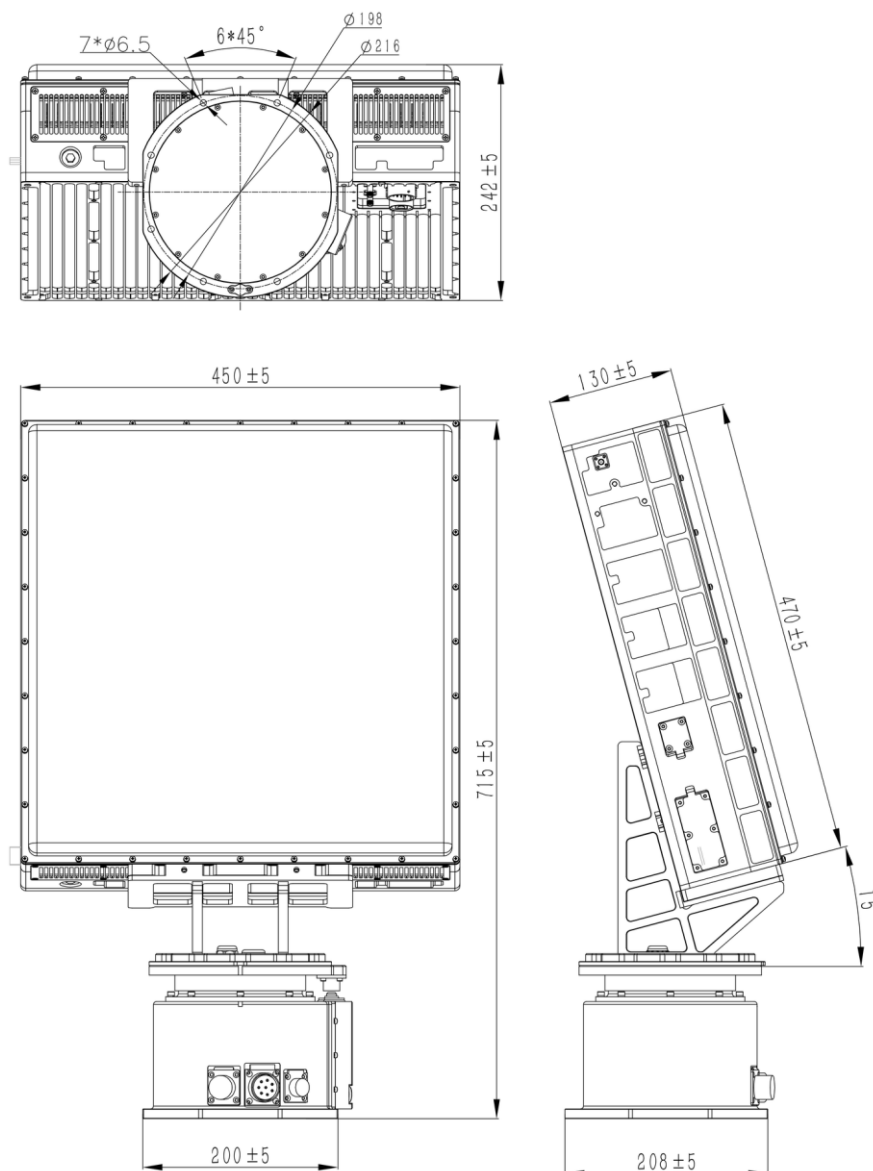
3.3 Physical & Environmental

Item	Parameter
Weight	≤35kg
Dimensions	≤455 × 720 × 247mm
Protection rating	IP66

The above specifications are typical nominal values; actual values are subject to the product contract and technical agreement.



4 Equipment Dimensions



CR-PX16B structural and installation dimensions (unit: mm)



5 Delivery List

5.1 Packing List

No.	Item	Unit	Qty
1	Radar array	Unit	1
2	Servo turntable	Set	1
3	Ethernet cable	PC	1
4	GPS antenna (with cable)	Pair	1
5	AC/DC power adapter	Set	1
6	Mounting accessories	Set	1
7	Operation & maintenance manual	Copy	1
8	Display & control software and communication protocol	Set	1

5.2 Logistics Dimensions

The complete set is packed in 2 cartons with a total gross weight of approximately 55kg.

No.	Contents	Carton dimensions (L×W×H, mm)	Gross weight
1	Radar host (array and servo turntable)	775 × 440 × 245	≈37kg
2	Power adapter, cables and accessories	490 × 350 × 320	≈18kg



6 Maintenance

6.1 Maintenance Schedule

The maintenance schedule may be determined according to actual service conditions, and shall in principle meet the following requirements:

- a) Perform maintenance once after transportation and before use;
- b) For radars in storage, perform maintenance every 3 months.

6.2 Maintenance Content

- a) Check the equipment appearance and completeness; check the installation for rust or cracks, installation firmness, and potential safety hazards of the installation platform;
- b) Power on and run the equipment for testing to ensure there is no abnormal radar alarm;
- c) Wipe dust and stains off the housings of the radar array face, servo turntable and power module with a dry, clean cloth;
- d) After the turntable has actually operated for 2 years, please contact the manufacturer for maintenance and replacement.



7 Transportation and Storage

7.1 Transportation Requirements

- The equipment can be transported by road, railway or air. Shock-proof packaging in dedicated packing cases is required during transportation.

7.2 Storage Requirements

7.2.1 Storage Environment

Packaged products shall be stored under the following environmental conditions to ensure their service life:

- a) Temperature
- b) Relative humidity
- c) The warehouse shall be free of acids, alkalis and other corrosive gases harmful to the equipment; during storage there shall be no strong mechanical vibration, shock or strong magnetic field.

7.2.2 Storage Life

- Unless otherwise specified in the contract, the storage period of this product shall not exceed five years from the date of receipt by the ordering party.



8 After-Sales Service

- a) The warranty period is 1 year. During this period, if the product is damaged or fails to work normally due to quality problems, the manufacturer is obliged to repair or replace it free of charge;
- b) The company responds to after-sales service requests from purchasing units within 12 hours.