



# CR-PX07B

X-Band Medium-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-PX07B is an X-band medium-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.

Using machine learning and AI classification based on micro-Doppler and track features, the radar effectively detects and classifies LSS targets such as drones, light aircraft, helicopters, powered paragliders, airships and balloons at an extremely low false alarm rate.

The turntable-mounted single panel combines mechanical scanning with two-dimensional electronic scanning, covering 360° in azimuth with elevation coverage configurable up to 80°. Elevation coverage, target update rate and instrumented range are software-configurable, making the radar a flexible low-altitude surveillance node for critical infrastructure, airports, border security and large-event protection.



## 2 Main Functions

### Detection & Coverage

- Strong detection performance with a low false alarm rate; stably detects maneuvering drones;
- Rain and cloud clutter suppression enables all-weather operation;
- Mechanical scanning combined with 2D electronic scanning covers the full 360° airspace and priority sectors;
- Elevation coverage, target update rate and instrumented range are software-configurable.

### Tracking & Classification

- Mechanical-scan tracking and electronic-scan TAS tracking;
- AI classification based on micro-Doppler and track features identifies drones, birds, people and vehicles;
- Map-based target positioning, track display and replay with range, azimuth, elevation and velocity readouts.

### Data & Operation

- Records and stores target plots, tracks and radar status data with replay and query support;
- Machine learning adapts to the environment — powers on and works with no parameter tuning;
- Self-positioning and orientation with automatic pitch and roll compensation;
- Real-time operating status monitoring.



## 3 Technical Specifications

### 3.1 Basic Performance & Accuracy

| Item                       | Parameter                                                                                                                                   |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency band             | X band (9.2GHz ~ 9.8GHz)                                                                                                                    |
| Detection range            | ≥5km (RCS 0.01m <sup>2</sup> , drone)                                                                                                       |
| Blind zone                 | ≤150m                                                                                                                                       |
| Operating mode             | Mechanical scan + 2D electronic scan                                                                                                        |
| Search coverage            | Mechanical: azimuth 0°~360°, elevation 0°~80° (mission configurable); electronic: azimuth -45°~45°, elevation 0°~80° (mission configurable) |
| Tracking                   | Mechanical-scan tracking / electronic-scan TAS                                                                                              |
| TAS tracked targets        | ≥6                                                                                                                                          |
| Minimum detection altitude | ≤10m                                                                                                                                        |
| Velocity range             | 1m/s ~ 100m/s                                                                                                                               |
| Update rate                | Mechanical ≤3.2s; electronic ≤3s (elevation coverage 30°, range 7.5km)                                                                      |
| Resolution                 | Range ≤15m, azimuth ≤6°, elevation ≤6°                                                                                                      |
| 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      | AC220V / DC24V |
| Power consumption | ≤350W          |

### 3.3 Physical & Environmental

| Item                  | Parameter                             |
|-----------------------|---------------------------------------|
| Weight                | ≤26kg (excl. power supply and tripod) |
| Dimensions            | ≤575 × 317 × 220mm                    |
| Operating temperature | -40°C ~ +70°C                         |

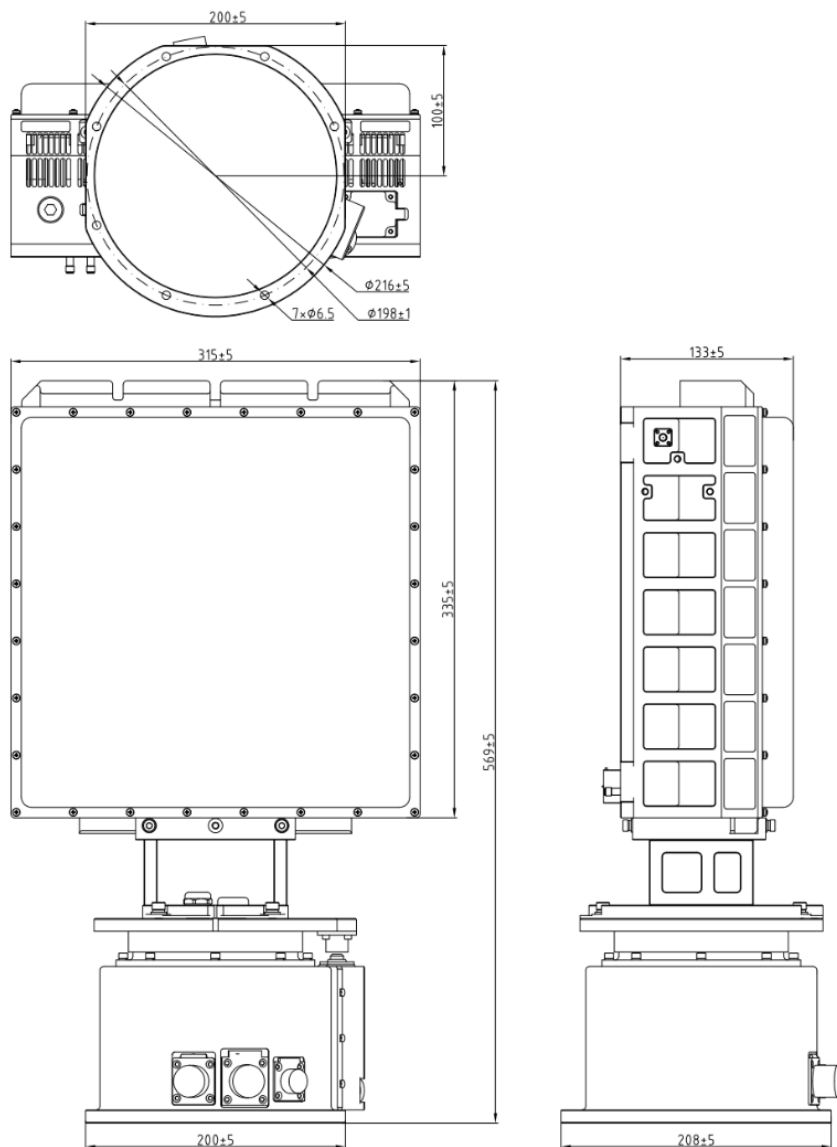


| Item              | Parameter |
|-------------------|-----------|
| Protection rating | IP66      |

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



## 4 Equipment Dimensions



CR-PX07B 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   | AC/DC power adapter                                   | Set  | 1   |
| 4   | Ethernet cable                                        | PC   | 1   |
| 5   | GPS antenna (with cable)                              | Pair | 1   |
| 6   | Mounting accessories                                  | Set  | 1   |
| 7   | Product certificate                                   | Copy | 1   |
| 8   | Operation & maintenance manual                        | Copy | 1   |
| 9   | 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 46kg.

| No. | Contents                               | Carton dimensions (L×W×H, mm) | Gross weight |
|-----|----------------------------------------|-------------------------------|--------------|
| 1   | Radar host (array and servo turntable) | 775 × 440 × 245               | ≈28kg        |
| 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.