
China Moneypro MPS196 next-Generation SAR Reconnaissance Synthetic Aperture Radar Payload Systems

At China MoneyPro, we specialize in the custom design and development of Synthetic Aperture Radar (SAR) systems, delivering solutions that represent the cutting edge of global radar technology. Our mission is to help clients achieve unmatched imaging, detection, and reconnaissance performance under the most challenging

Product Overview

China Moneypro MPS196 SAR (Synthetic Aperture Radar) Reconnaissance Payload is an advanced **active microwave remote sensing system** that enables all-weather, day-and-night imaging capabilities. With the ability to penetrate clouds, fog, and partial surface coverings, it provides unparalleled situational awareness across both **military** and **civilian applications**.

- **Military Applications:** strategic and tactical reconnaissance, target identification, battlefield assessment, missile guidance, moving target indication (MTI), and maritime surveillance.
- **Civilian Applications:** disaster monitoring, natural resource exploration, precision agriculture, forestry management, and infrastructure inspection.

Key Features

1. **Anti-Jamming Performance** – Strong resistance to co-frequency interference and suppression jamming.
2. **Dual-Sided Imaging** – Real-time stripmap imaging of stationary or slow-moving ground targets.
3. **Spotlight Mode** – Real-time high-resolution imaging of designated regions.
4. **Command & Control Functions** – Remote self-check, servo loop inspection, power management, and mode switching.
5. **Built-in Reliability** – Power-on self-test, real-time fault monitoring, and fault localization.

6. **Flexible Maintenance** – Support for non-intrusive testing and software online upgrade.
 7. **Stabilized Operation** – Space stabilization under platform motion.
 8. **Comprehensive Data Logging** – Raw echo data and system status recording with detachable storage or easy download capability.
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Technical Specifications

Antenna & Servo System

- Scan Range: Azimuth -110° to $+110^{\circ}$, Elevation -5° to -45°
- Pointing Accuracy (3σ): Azimuth $\leq 0.1^{\circ}$, Elevation $\leq 0.2^{\circ}$

SAR Imaging

- Operating Band: Ku-band
- Imaging Range: Azimuth $\pm 70^{\circ}$ – 110° , Elevation -3° to -45°
- Resolution & Coverage: Optimized across multiple pixel resolutions, with performance not inferior to specified benchmarks

Imaging Performance Requirements (Typical Ground Height $H = 2000$ m)

- Ground Resolution: $0.5 \text{ m} \times 0.5 \text{ m}$
 - Operating Range: 8 km
 - Imaging Swath: $\geq 4 \text{ km}$
 - Reference Index Swath: $\geq 5 \text{ km}$
- Ground Resolution: $0.3 \text{ m} \times 0.3 \text{ m}$
 - Operating Range: 6 km
 - Imaging Swath: $\geq 2 \text{ km}$
 - Reference Index Swath: $\geq 3 \text{ km}$
- Ground Resolution: $0.1 \text{ m} \times 0.1 \text{ m}$
 - Operating Range: 3 km
 - Imaging Swath: $\geq 1 \text{ km}$
 - Notes: Reference Index
- Noise Equivalent Sigma Zero (NE δ 0): $\leq -20 \text{ dB}$
- Real-Time Imaging: $<10 \text{ s}$ processing, with no accumulation required for echo data

- Geolocation Accuracy: ≤ 10 m CEP in flat terrain
- Typical Scenes: desert, urban areas, farmland, ports, airports, coastal regions
- Image Distortion (3σ): $\leq 2.5\%$ in ground projection direction
- Gray Scale Quantization: 8-bit
- Continuous Imaging Duration: ≥ 15 minutes

Data Storage & Transmission

- Storage Capacity: ≥ 1 TB
- Data Interface: Gigabit Ethernet or other high-speed interfaces for ground station connectivity

Mechanical & Physical

- Dimensions: 190 mm (W) $\times$ 155 mm (H) $\times$ 250 mm (L)
- Weight: ≤ 7 kg

Advantages at a Glance

- **All-weather capability:** Reliable imaging in rain, fog, and low-visibility conditions.
- **High precision:** Sub-10 m geolocation accuracy.
- **Compact & Lightweight:** Less than 7 kg with small form factor, ideal for UAV and airborne integration.
- **High endurance:** Continuous imaging up to 15 minutes with fast data processing.

Why Partner With Us?

- **Tailored Solutions** – We work closely with clients to develop SAR systems optimized for their unique mission profiles, whether airborne, naval, or ground-based.
- **Next-Generation Technology** – Leveraging **Ku-band and multi-band architectures**, ultra-wideband waveforms, and adaptive digital beamforming, our systems deliver **sub-meter resolution** and **real-time imaging refresh rates** exceeding international benchmarks.

- **Advanced Anti-Jamming & Anti-Spoofing** – Built-in electronic counter-countermeasures (ECCM), space-time adaptive processing (STAP), and AI-driven interference suppression ensure mission success in highly contested electromagnetic environments.
- **Lightweight & Compact Design** – Proprietary materials and miniaturized RF components enable payloads weighing under 10 kg, seamlessly integrating with UAVs, aircraft, and mobile platforms.
- **Data Intelligence Ready** – SAR outputs are optimized for fusion with **AI analytics, EO/IR imaging, and IMU/GNSS navigation**, enabling next-generation situational awareness and decision-making.

The **SAR Reconnaissance Payload** is a compact, lightweight, and high-performance solution designed for next-generation ISR (Intelligence, Surveillance, and Reconnaissance) missions. With its Ku-band high-resolution imaging, advanced anti-jamming capability, and versatile integration features, it stands out as a reliable choice for both defense and civilian applications.

Learn More & Contact Us

For more details, datasheets, and integration support, please visit our website or contact our sales team.

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