

China Moneypro MPY136 airborne Multi-Function Active Phased Array Fire-Control Radar (AMFCR)

The Airborne Multi-Function Fire-Control Radar (AMFCR) is a **state-of-the-art, multi-role active electronically scanned array (AESA) radar system**, engineered for **air superiority, precision strike, maritime surveillance, and advanced navigation support**. Designed for next-generation fighter aircraft, UAVs, and special mission platforms, it combines **long-range detection, high-resolution imaging, and multi-target engagement** into one compact, fully digital solution.

Air-to-Air Capabilities

- **Track-While-Scan (TWS):** Detection of fighter-sized targets beyond **200–250 km**; tracks up to **64 targets simultaneously**.
 - **Single/Multi-Target Track (STT/MTT):** Sub-meter angular accuracy ($<0.1^\circ$ RMS) for cooperative or independent engagement.
 - **Air Combat Maneuvering (ACM):** Close-in mode with **<1 sec target lock-on time** and automatic acquisition in dynamic dogfight scenarios.
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Air-to-Ground Capabilities

- **Synthetic Aperture Radar (SAR):** Provides **0.25 m resolution imagery** at standoff ranges >100 km, supporting target classification under all-weather/day-night conditions.
 - **Doppler Beam Sharpening (DBS):** Enhances resolution up to **0.3 m class** for tactical reconnaissance.
 - **Ground Moving Target Indication (GMTI):** Detects vehicles moving as slow as **5 km/h** in cluttered terrain; simultaneous GMTI + SAR imaging.
 - **Fixed Target Tracking (FTT):** Continuous tracking with **sub-10 m accuracy CEP** for precision-guided munition support.
 - **Air-to-Ground Ranging (AGR):** Provides direct ranging data with **<3 m accuracy** for fire-control solutions.
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Air-to-Sea Capabilities

- **SEA I Mode:** Detects small boats (<2 m radar cross-section) in **high sea states (Sea State 5–6)** at >120 km.
 - **SEA II Mode:** Classifies large vessels (>10,000 tons) at ranges up to **350 km**, even under heavy jamming conditions.
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Navigation & Support Modes

- **Terrain Avoidance (TA):** Provides terrain-following guidance with **1 m vertical accuracy** for low-altitude penetration.
 - **Beacon (BCN):** High sensitivity beacon tracking, supporting integrated GNSS-denied navigation.
 - **Weather Detection (WX):** Doppler weather radar identifies storm cells >50 km away, with **turbulence mapping resolution of 100 m**.
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Core Technical Highlights

- **AESA Digital Beamforming (DBF):** >2000 transmit/receive (T/R) modules with **GaN (Gallium Nitride)** technology for higher power efficiency and thermal resilience.
 - **Multi-Target Processing:** Tracks **>64 aerial targets, >100 ground movers, and >20 maritime objects simultaneously**.
 - **Beam Refresh Rate:** Adaptive beam steering with **>1200 Hz refresh rate**, supporting stable null steering in high-dynamics flight.
 - **ECCM (Electronic Counter-Countermeasures):** Adaptive frequency agility across **L/S/X bands**, sidelobe cancellation >60 dB, and LPI (Low Probability of Intercept) waveform technology.
 - **Operational Envelope:** Effective from **200 ft to 60,000 ft altitude**, supporting supersonic flight conditions.
 - **Reliability:** MTBF >1200 hours; modular open systems architecture for plug-and-play upgrades.
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Why It Represents the World's Leading Technology

The AMFCR embodies **the highest standard of airborne radar innovation**, with performance benchmarks that align with or exceed leading systems such as **AN/APG-81, Captor-E, and Zhuk-AE**:

- **Detection range** exceeding 250 km for 3 m² RCS targets.
- **SAR imaging** at 0.25 m resolution, surpassing conventional tactical radars.
- **ECCM resilience**, capable of maintaining target lock under **>120 dB jamming-to-signal ratio environments**.
- **Real-time multi-domain versatility**, switching seamlessly between **air-to-air, air-to-ground, and air-to-sea roles** without degradation in performance.

This radar is not just an incremental upgrade — it is a transformational leap, enabling platforms to achieve unmatched **situational awareness, survivability, and mission success** in the most contested operational environments.

Why Choose Us:

AMFCR vs. International State-of-the-Art Radars

Parameter	Mainstream International Systems (e.g., AN/APG-81, Captor-E, Zhuk-AE)	China MoneyPro UAV – AMFCR
Detection Range (3 m ² RCS target)	~180–220 km	>250 km
Air-to-Air Target Tracking	40–50 simultaneous targets	>64 simultaneous targets
SAR Imaging Resolution	0.5 m – 1 m class	0.25 m ultra-high resolution
GMTI Capability	Detects movers >10 km/h	Detects movers as slow as 5 km/h
Air-to-Ground Accuracy (CEP)	10–15 m	<5–10 m with RTK-GNSS & IMU fusion

Parameter	Mainstream International Systems (e.g., AN/APG-81, Captor-E, Zhuk-AE)	China MoneyPro UAV – AMFCR
Maritime Detection	Large vessels ~250 km, small boats ~80 km	Large vessels 350 km+, small boats 120 km+ in Sea State 5–6
Beam Refresh Rate	~600–800 Hz	>1200 Hz adaptive digital beamforming
ECCM Performance	Resistant to moderate jamming (40–60 dB J/S)	Maintains lock under >120 dB J/S ratio with AI-enhanced ECCM
Frequency Agility	Single/multi-band (X or Ku)	Multi-band L/S/X/Ku with GaN T/R modules
Terrain Avoidance Accuracy	3–5 m vertical	1 m vertical accuracy
Weather Detection	Standard Doppler mapping	50 km storm detection with 100 m turbulence mapping
System Architecture	Modular, limited upgrade paths	Open modular architecture, plug-and-play for future growth
Reliability (MTBF)	~800–1000 hours	>1200 hours
Platform Integration	Fighters & limited UAV compatibility	Fighters, UAVs, special mission aircraft

Key Takeaways

- **Superior Detection Range:** Extends reach by >15% over most international systems.
- **Unmatched SAR Imaging:** Sub-0.3 m resolution for next-gen precision strike and reconnaissance.
- **AI-Driven ECCM:** Operates in the world's most contested electronic warfare

environments.

- **Versatile Integration:** Optimized for both manned and unmanned aerial platforms.
- **Future-Proof Design:** Modular GaN-based AESA architecture with upgrade flexibility.

Positioning: With its **extended range, unmatched imaging, advanced GMTI, and extreme ECCM resilience**, the AMFCR is a **world-leading airborne radar solution**, setting new benchmarks for **situational awareness, survivability, and mission dominance**.

Learn More & Contact Us

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

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