



WM22 Automotive-Grade Main Control Chip

WM22 from WaveMatrix sets a new standard in automotive-grade main control chips, offering exceptional capabilities in image processing, computational power, security, and energy efficiency.

Key Features & Benefits

● **AI-Powered Image Processing**

Built with WaveMatrix's proprietary **AI ISP technology**, the WM22 optimizes sensor modeling and image processing to enhance vehicle perception in complex driving environments. This advanced AI algorithm ensures reliable, safe driving even in challenging black-light conditions, delivering:

- ✧ Full-color imaging in low-light environments
- ✧ AI-driven HDR imaging
- ✧ Dynamic Image Stabilization (DIS)
- ✧ AI scene enhancement, including dehazing and purple fringe removal
- ✧ High-quality demosaic processing
- ✧ Multi-spectral fusion with RGB-IR support and latency optimization, ensuring exceptional image quality across diverse automotive applications.

● **High-Performance AI Capabilities**

Powered by WaveMatrix's **Neo NPU**, the WM22 delivers unmatched computational power with support for low-bitwidth mixed precision. This allows for continuous AI algorithm evolution, achieving **twice the computing power** of domestic competitors in benchmark tests. The chip supports mainstream CNNs with an extensive range of operators and instructions for versatile applications.

● **ADAS-Ready**

The WM22 is engineered for **Advanced Driver Assistance Systems (ADAS)**, offering full support for data closed-loop processing. With a robust **4K@30 fps** codec and cutting-edge security features such as hardware-level data encryption and desensitization coding, the WM22 aligns with national encryption standards to ensure the utmost safety and privacy.

- **Energy Efficiency & Thermal Optimization**

Designed with energy efficiency in mind, the WM22 integrates ultra-low power consumption and optimized thermal designs. It has been successfully deployed in mass production for smart front-view all-in-one solutions and is also used in integrated systems for CMS electronic rear-view mirrors and driver monitoring systems (DMS/OMS).

- **Advanced AI ISP Technology**

With its innovative AI ISP, the WM22 enhances night vision, stabilization, dehazing, and the removal of purple fringes. These features significantly improve vehicle perception in complex driving environments, ensuring safer and more reliable driving experiences, even in challenging conditions.

- **Unmatched Security & Efficiency**

The WM22 supports Chinese domestic encryption standards for hardware-level data encryption, ensuring that sensitive data is securely handled. Its optimized heat dissipation and low power consumption enable the development of compact, cost-effective driving systems without compromising performance.

- **Proven Success in the Automotive Industry**

Already deployed in multiple vehicle models, the WM22 has received high praise for its performance, stability, and impact on the development of smarter, safer driving technologies. WaveMatrix continues to lead the way in advancing intelligent driving solutions, working closely with partners to enhance travel safety and convenience for all.

Future Prospects

With its advanced features and technical superiority, the WM22 is set to play a key role in the future of intelligent driving. Its exceptional sensing, computing, and data processing capabilities make it an ideal choice for a variety of automotive applications, including front-view all-in-one solutions, CMS electronic rearview mirrors, and DMS/OMS dual systems.