



Near-Eye Display

Due to varying usage requirements, near-eye displays demand finer, higher-contrast, and even higher-transparency images compared to conventional displays. Additionally, the weight and size of the display are crucial design factors. To meet these high specifications, Ennostar continuously invests in R&D, exploring innovations, and integrating advanced technologies into product development. Our commitment is to deliver astonishing visual experiences to consumers, leading the way into a new era of near-eye displays.

Virtual Reality(VR)

Market Potential



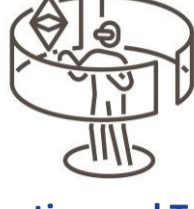
Gaming and Entertainment

Players immerse themselves in virtual worlds by wearing VR headsets, interacting with characters, and experiencing immersive gaming.



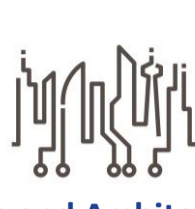
Tourism and Cultural Experiences

Enable people to experience tourist attractions and cultural sites from around the world from the comfort of their homes.



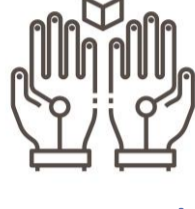
Education and Training

Provide interactive learning experiences that simulate real-life scenarios. Students can engage in virtual experiments, scenario simulations, and training courses through VR headsets, thereby enhancing learning efficiency and interest.



Design and Architecture

Assist designers and architects in real-time simulation and visualization during the design process, allowing for better understanding of design concepts, improvement of design solutions, and communication with clients.



Medical Treatment and Rehabilitation

VR technology also plays a crucial role in healthcare, such as treating anxiety, alleviating pain, and rehabilitation training. Patients can experience virtual worlds through VR to divert attention, relax, or engage in physical rehabilitation exercises in a virtual reality environment.

Ennostar's Highlights

Edge-lit Backlight with Quantum Dot

- **Enhanced Color Performance:** QD backlight technology utilizes quantum dot materials to enhance the color performance of displays, delivering a wider color gamut and more saturated colors.
- **Improved Contrast and Brightness:** Compared to traditional LED backlighting, QD backlighting effectively enhances the contrast and brightness of displays.
- **Energy-saving and Environmentally Friendly:** Relative to traditional white LED backlighting, QD backlighting achieves higher energy efficiency while also having lower energy consumption and carbon emissions, aligning with modern trends towards green environmental protection.

Non-QD



QD



Ennostar is with you in every step

Products	Epitaxial Wafer	Chip	Package	Module
	●	●	●	●

Mini LED Backlight

- **Outstanding Local Contrast:** Mini LED backlight technology enables more zones of local dimming, thus achieving higher local contrast within the same image, displaying more details and depth.
- **Longevity and Stability:** Compared to Micro OLED, Mini LED backlighting offers a longer lifespan and more stable performance, without the risk of burn-in issues associated with Micro OLED. This ensures consistency and durability in VR display performance.

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Augmented Reality (AR)

Market Potential



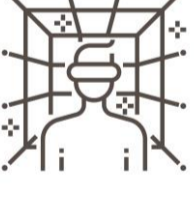
Smart Cities and Smart Homes

Integrating virtual elements into the real world to provide people with more convenient and intelligent urban and home experiences. For example, through AR glasses or devices, people can view real-time traffic information, navigation routes, and nearby services, or use AR devices at home for virtual home decoration and appliance control.



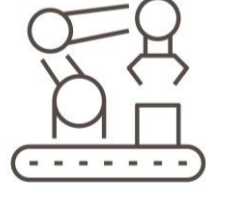
Healthcare

Enhancing the diagnosis, treatment, and training processes in the healthcare industry. Doctors can use AR devices to view real-time medical images or virtual anatomical models of patients to aid in diagnosis and surgical planning. Additionally, AR can be used for training medical students and healthcare professionals, simulating various clinical scenarios and surgical procedures.



Retail and Consumer Experience

Transforming the consumer experience during shopping. Through AR glasses or mobile applications, consumers can try on clothing, test cosmetics, or place furniture in the real world to better understand product styles, sizes, and appearances.



Industrial and Manufacturing

Improving efficiency and safety in the industrial and manufacturing industries. Workers can use AR devices to view real-time guides and operating procedures, helping them complete complex assembly tasks or equipment maintenance while reducing the risk of errors and accidents.

Ennostar's Highlights

High Performance 8" LED on Silicon (LEDoS)

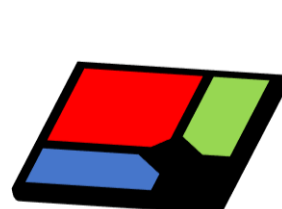
Ennostar combines blue LED with quantum dot (QD) color resolution and color saturation, providing users with a more brilliant visual experience.

To meet the demands of AR displays, Ennostar has adopted a technology that combines high PPI arrays with CMOS control ICs. The GaN on Si LED chip technology provides customers with a perfect solution, achieving seamless integration with Si-based CMOS.

MAC

Reduction in Chip Channel Size:

In current Micro LED technology, due to the precision limitations of mass transfer in the client end, the narrowest design of chip channels is only 6 μm wide. Through MAC (Monolithic Array Chip) chip technology, we achieve a smaller width precision, effectively increasing the emitting area.



Significant Increase in Chip Quantity:

With the reduction in chip channel size and the integration of three colors on the same Chip, compared to the approximate size of a 2040 Flip chip, the number of chip in MAC has increased nearly threefold. Therefore, customers can obtain more chip output, thereby improving yield and efficiency.

Excellent Current Propagation:

In Micro LED technology, the current propagation of red light is poorer than that of blue light. However, MAC Chips utilize blue light combined with red quantum dot emission, significantly improving current propagation. Compared to native red light, MAC chips exhibit lower Vf (forward voltage) under high current, further enhancing efficiency and performance.

Vertical Micro LED Chip

Miniaturization of Chip Size:

In current flip-chip Micro LED technology, the size of chips is limited due to the PN pads needing to be on the same side. However, adopting a vertical chip design places the pads at the top and bottom of the chip, thereby achieving extreme miniaturization of the chip size.



Optimal Current Diffusion Effect:

Due to the inherent advantages of the vertical structure, it can carry higher currents, resulting in better current diffusion compared to other types of chips. Additionally, vertical chips can further overcome the efficiency issues of red light flip-chips at certain sizes, providing reliable support for product performance.