Ennostar Group

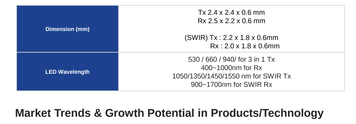
Biosensing

As technology advances and biometric sensing becomes more common, the future market continues to expand. This trend presents opportunities for consumers seeking convenience and better health management. Ennostar provides a wide range of biometric sensing products to meet the needs of leading brands. With diverse, customizable designs and high-quality manufacturing, Ennostar is the industry's top choice for efficient, energy-saving solutions, and a trusted partner for customers.

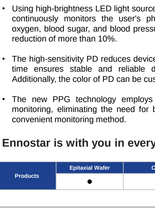
540/630/660/840/940 nm
Heart Rate
Blood Oxygen

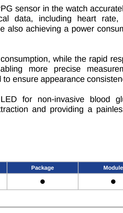
850/940 nm
Proximity
Facial Recognition

>1050 nm
Proximity
Skin Moisture
Blood Glucose



PPG Sensor for Smart Watch and Smart Ring





Dimension (mm)	Tx 2.4 x 2.4 x 0.6 mm Rx 2.5 x 2.2 x 0.6 mm (SWIR) Tx : 2.2 x 1.8 x 0.6mm Rx : 2.0 x 1.8 x 0.6mm
LED Wavelength	530 / 660 / 940 for 3 in 1 Tx 400~1000nm for Rx 1050/1350/1450/1550 nm for SWIR Tx 900~1700nm for SWIR Rx

Market Trends & Growth Potential in Products/Technology

The smartwatch market is growing due to technological advancements and increasing health awareness. Its diverse functionalities appeal to a wide consumer base, ensuring ongoing growth. Additionally, the emerging smart ring market presents opportunities for innovative features, particularly in the integration of health monitoring.

Ennostar's Highlights

- Using high-brightness LED light sources, the PPG sensor in the watch accurately and continuously monitors the user's physiological data, including heart rate, blood oxygen, blood sugar, and blood pressure, while also achieving a power consumption reduction of more than 10%.
- The high-sensitivity PD reduces device power consumption, while the rapid response time ensures stable and reliable data, enabling more precise measurements. Additionally, the color of PD can be customized to ensure appearance consistency.
- The new PPG technology employs SWIR LED for non-invasive blood glucose monitoring, eliminating the need for blood extraction and providing a painless and convenient monitoring method.

Ennostar is with you in every step

Products	Epitaxial Wafer	Chip	Package	Module
	●	●	●	●

Heart Rate Variability (HRV) Analysis Application System(Software as a Medical Device)

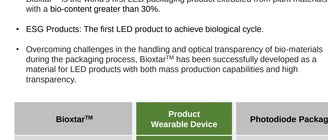
Market Trends & Growth Potential in Products/Technology

As awareness of mental health grows and the widespread adoption of smartphones continues, the demand and scope of application for such software in the medical field will continue to expand. This software is capable of providing evaluations of the autonomic nervous system, aiding in the tracking and assessment of psychiatric treatment processes, with an agreement analysis above 95% compared with ECG. Additionally, it can also enhance public attention and awareness of self-mental health.

Ennostar's Highlights

- Ennostar's medical-grade heart rate variability application system, measurable using a smartphone, assesses the state of the autonomic nervous system, provides effectiveness tracking for psychiatric therapy processes, and further enhances public awareness of self-psychological health.
- Ennostar's subsidiary has obtained medical equipment approval from the Taiwan Ministry of Health and Welfare.
- The agreement analysis of the HRV result is above 95% compared with ECG.

Proximity Sensors for TWS



Dimension (mm)	2.5 x 2.0 x 0.55
Wavelength	530 / 660 / 940 / nm for LED 400~1000nm for PD

Market Trends & Growth Potential in Products/Technology

The TWS earphone market continues to grow steadily, driven by increasing consumer demand for portable audio devices. TWS earphones have become mainstream in response to this trend. This expanding market provides more opportunities for integrating innovative features, including health monitoring functions.

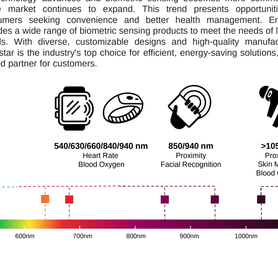
Ennostar's Highlights

- In addition to providing LED chips, Ennostar also offers the industry's smallest integrated PPG sensor SIP (2.5x2.0x0.6mm). This is applied in TWS earphones, adding heart rate, blood oxygen, and temperature measurement functions while maintaining the comfort and appearance of the earphones.
- Ennostar's products with the proximity sensor, it effectively saves power for Bluetooth earphones, extending battery life and delivering a better user experience for consumers.

Ennostar is with you in every step

Products	Epitaxial Wafer	Chip	Package	Module
	●	●	●	

Bioxtar™– Material for Wearable Device



Wearable Device

Market Trends & Growth Potential in Products/Technology

With the growing global concern for sustainable environments, the market for green materials is thriving. Finding solutions to reduce carbon emissions, save energy, and conserve resources has become a primary objective. In this context, bio-based materials such as plant extracts have emerged as a crucial component of the supply chain. They help reduce reliance on finite resources and mitigate adverse environmental impacts.

Ennostar's Highlights

- Bioxtar™ is the world's first LED packaging product extracted from plant materials, with a bio-content greater than 30%.
- ESG Products: The first LED product to achieve biological cycle.
- Overcoming challenges in the handling and optical transparency of bio-materials during the packaging process, Bioxtar™ has been successfully developed as a material for LED products with both mass production capabilities and high transparency.

Bioxtar™	Product Wearable Device	Photodiode Package
9,060Kg CO2e	CO2e Emission	36,240 Kg CO2e
100%	Reverse Light current	100%