

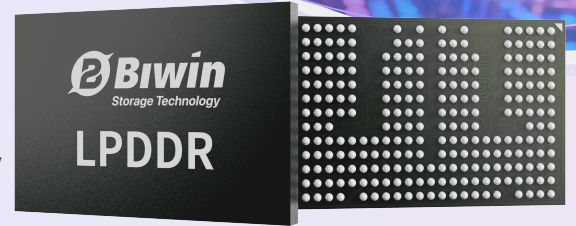
BIWIN LPDDR5X

BIWIN high-performance LPDDR5X uses a 1 α /1 β nm process technology, with data rate up to 8533 MT/s and capacities of 32 Gb, 48 Gb, 64 Gb, 96 Gb, and 128 Gb.

It offers transfer bandwidth up to 68 GB/s, with 25% lower power consumption compared to LPDDR4X.

LPDDR5X features advanced self-refresh and data scheduling strategies for data accuracy in high-frequency scenarios.

With exceptional performance and energy efficiency, it's ideal for high-performance devices such as flagship smartphones, laptops, tablets, 5G devices, and especially for AI applications.



Key Features

High-Speed Data Transfer

The BIWIN LPDDR5X achieves data transfer rates up to 8533 MT/s, with a maximum capacity of 128 Gb. It incorporates an innovative WCK (Write Clock) architecture, which doubles the data transfer efficiency compared to traditional architectures, providing exceptionally high bandwidth to meet the demands of next-generation computing platforms.

Power Efficiency for Extended Battery Life

Operating at VDDQ as low as 0.5 V, the BIWIN LPDDR5X supports multiple low-power states, including Deep Sleep Mode and Standby Mode, and integrates technologies such as Partial Array Self-Refresh (PASR) and Temperature Compensated Self-Refresh (TCSR). These features significantly reduce overall power consumption, extending the battery life of high-end devices.

Reliable Data Transmission and Stable Operation

With built-in On-Die ECC (Error Correction Code), the BIWIN LPDDR5X can detect and correct internal data errors in real-time, greatly enhancing data integrity and reliability. It integrates Decision Feedback Equalization (DFE) and Programmable Equalization, along with Read/Write Training, offering long-term stability and optimal performance of the system.

Compact Form Factor

Using multi-die stacking, the BIWIN LPDDR5X integrates ultra-high capacity in an extremely small physical space. It features a high-integration, compact FBGA package with dimensions of only 12.4 x 8.2 mm, making it an ideal choice for next-generation ultra-thin, lightweight mobile devices.

Technologies

LINK ECC

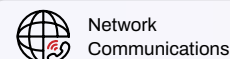
PASR & PAAR

DVFSQ & DVFSC

Data Copy

Write X

Applications



Model Name	LPDDR5X
Interface	LPDDR5X
Data Rate	8533 MT/s (Max.)
Capacity	32 Gb, 48 Gb, 64 Gb, 96 Gb, 128 Gb
Channel	2×16-bit / 4×16-bit
Voltage	V _{DD1} = 1.8 V V _{DD2L} = 0.9 V V _{DD2H} = 1.05 V V _{DDQ} = 0.5 V - 0.3 V
Dimensions	8.20 × 12.40 mm, 12.40 × 15.00 mm, 12.40 × 14.00 mm
Packaging	FBGA 245 Ball, FBGA 315 Ball, FBGA 496 Ball
Operating Temperature	-25°C to + 85°C
Storage Temperature	-40°C to + 85°C
Supported Platforms	ESWIN, Rockchip, Allwinner

Order Information

Data Rate	Capacity	Part Number	Packaging	Dimensions
8533 Mbps	128 Gb	BWMYAX32P8A-128G	FBGA315	12.40 × 15.00 mm
8533 Mbps	64 Gb	BWMYAX32P8A-64G	FBGA315	12.40 × 15.00 mm
8533 Mbps	48 Gb	BWMEJX32P8A-48G	FBGA315	12.40 × 15.00 mm
8533 Mbps	32 Gb	BWMYAX32P8A-32G	FBGA315	12.40 × 15.00 mm
8533 Mbps	64 Gb	BWMYAX32U9A-64G	FBGA245	8.20 × 12.40 mm
8533 Mbps	48 Gb	BWMEJX32U9A-48G	FBGA245	8.20 × 12.40 mm
8533 Mbps	32 Gb	BWMYAX32U9A-32G	FBGA245	8.20 × 12.40 mm
8533 Mbps	128 Gb	BWMYAX64F9B-128G	FBGA496	12.40 × 14.00 mm
8533 Mbps	96 Gb	BWMEJX64F9B-96G	FBGA496	12.40 × 14.00 mm
8533 Mbps	64 Gb	BWMYAX64F9B-64G	FBGA496	12.40 × 14.00 mm
8533 Mbps	48 Gb	BWMETX64F9B-48G	FBGA496	12.40 × 14.00 mm

1. Tested by BIWIN labs. Actual performance may vary due to systems, devices, or environment.

2. Maintenance and future updates are required throughout the product lifecycle. Specifications are subject to change without notice.

3. The pictures are for illustration only. Actual products may vary due to product enhancements or changes.

4. Not all products are sold in all regions of the world.

5. Please visit www.biwin technology.com for warranty details in your region.

6. For more information, please contact sales@biwintech.com.

Global Headquarters:

BIWIN STORAGE TECHNOLOGY CO., LTD.

Building #4, South Zone #2, Zhongguan Honghualing Industrial Zone,

Nanshan District, Shenzhen, Guangdong, China

+86 (755) 2671-5701

sales@biwintech.com