

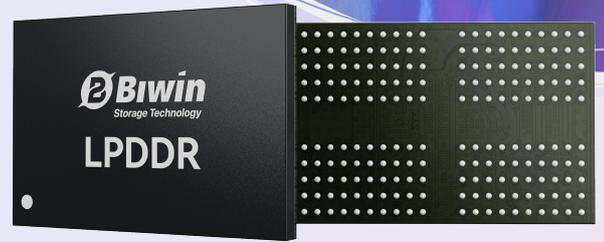
# LPDDR4/4X

BIWIN LPDDR4/4X uses Single Bank Group mode, with data rate up to 4266 Mbps and bandwidth up to 17 GB/s, a 33% improvement over LPDDR4.

LPDDR4/4X features a VDDQ voltage reduced to 0.6V and includes the Self-Refresh Power-Down feature which decreases I/O dynamic and standby power consumption by approximately 15–20% on average.

It is backward compatible with LPDDR4 protocols and interfaces.

BIWIN LPDDR4/4X is widely used in mobile devices such as smartphones, tablets, and ultrathin laptops.



## Key Features

### Exceptional Performance for Demanding Applications

LPDDR4/4X delivers data transfer rates up to 4266 Mbps, providing substantial bandwidth to efficiently handle high-definition displays, frame-rate applications and intensive multitasking. This capability contributes to enhanced system responsiveness and consistent performance across demanding applications.

### Low Power Design for Extended Battery Life

Leveraging advanced low-power architecture, LPDDR4/4X reduces I/O voltage (VDDQ) from 1.1V in LPDDR4 to 0.6V, significantly lowering dynamic power consumption during both operation and switching. This energy-efficient design directly translates into extended battery life, making it the ideal choice for power-sensitive devices such as smartphones, tablets, and portable electronics, and for ensuring long-lasting performance.

### Stable Signal Integrity and Reliable Data Transfer

LPDDR4/4X incorporates the LVSTL (Low Voltage Swing Terminated Logic) signal standard, optimized for low-voltage operation. At a working voltage of just 0.6V, this technology offers enhanced signal integrity and stability, maintaining reliable data transfer in challenging conditions.

### Seamless Upgrade for Cost Efficiency

Fully pin-compatible with the previous LPDDR4 standard, LPDDR4/4X allows device manufacturers to upgrade without making changes to PCB layouts or designs. This compatibility reduces the need for motherboard redesigns, significantly shortening product development cycles, reducing costs, and mitigating risks.

## Technologies

PASR (Partial Array Self-Refresh)

Program ODT (On-Die Termination)

Single-Ended Clock

DQS (Data Strobe)

## Applications



Mobile Phone



Tablet



Laptop



Network Communications



Smart Healthcare



Smart Devices

## Specifications

<b>Model Name</b>	LPDDR4 / 4X
<b>Interface</b>	LPDDR4 / 4X
<b>Data Rate</b>	4266 Mbps (Max.)
<b>Capacity</b>	1 GB, 2 GB, 3 GB, 4 GB, 6 GB, 8 GB
<b>Channel</b>	1×16-bit / 2×16-bit
<b>Voltage</b>	V <sub>DD1</sub> = 1.70 V - 1.95 V V <sub>DD2</sub> = 1.06 V - 1.17 V V <sub>DDQ</sub> = 0.57 V - 0.65 V / 1.06 V - 1.17 V
<b>Dimensions</b>	10.00 × 14.50 mm, 10.00 × 15.00 mm
<b>Packaging</b>	FBGA 200 Ball
<b>Operating Temperature</b>	-25°C to + 85°C
<b>Storage Temperature</b>	-40°C to + 85°C
<b>Supported Platforms</b>	Amlogic, AutoChips, ASR, Gokemicro, Horizon, Mediatek, Phytium, Rockchip, StarFive, SemiDrive, Unisoc
<b>Warranty</b>	3-Year Limited

## Order Information

Data Rate	Capacity	Part Number	Packaging	Dimensions
4266 Mbps	8 GB	BWMZCX32H2A-64G-X	FBGA200	10.00 × 14.50 mm
4266 Mbps	8 GB	BWCGBX32N2A-64G-X	FBGA200	10.00 × 15.00 mm
4266 Mbps	6 GB	BWMEIX32H2A-48G-X	FBGA200	10.00 × 14.50 mm
4266 Mbps	4 GB	BWMZCX32H2A-32G-X	FBGA200	10.00 × 14.50 mm
4266 Mbps	4 GB	BWCGBX32N2A-32G-X	FBGA200	10.00 × 15.00 mm
4266 Mbps	3 GB	BWMEIX32H2A-24G-X	FBGA200	10.00 × 14.50 mm
4266 Mbps	2 GB	BWMZEX32H2A-16G-X	FBGA200	10.00 × 14.50 mm
4266 Mbps	1 GB	BWMZFX32H2A-16G-X	FBGA200	10.00 × 14.50 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.biwintech.com](http://www.biwintech.com) for warranty details in your region.
6. For more information, please contact [sales@biwintech.com](mailto:sales@biwintech.com).

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