Biwin
Storage Technology

ePoP LPDDR4X

BIWIN ePoP LPDDR4X integrates LPDDR4X DRAM and eMMC 5.1 storage into a Package-on-Package (PoP) solution with a 144-ball FBGA package.

With a compact size of just 8.00 x 9.50 mm, it achieves sequential read and write speeds up to 290 MB/s and 140 MB/s, with frequency up to 4266 Mbps.

BIWIN ePoP LPDDR4X offers capacity up to 64 GB+32 Gb. It is a next-generation storage solution designed for high-end smartwatches.

Compared to previous generations, this solution features a 128.6% increase in frequency, a 32% reduction in size, and is certified by the Qualcomm 5100 platform.

Key Features

Ultra-Thin Form Factor

The BIWIN ePoP LPDDR4X employs cutting-edge packaging technologies, including multi-layer die stacking, ultra-thin die, and multi-chip heterogeneous integration. With a thickness of just 0.65 mm, this highly compact form factor significantly reduces required PCB space, making it an ideal storage solution for the design of ultra-slim, lightweight smart wearable devices and next-generation mobile electronics.

High Integration

The BIWIN ePoP LPDDR4X integrates eMMC 5.1 and LPDDR4X into a single package, achieving data transfer speeds up to 4266 Mbps and read speeds up to 300 MB/s, offering smooth performance even in multi-threaded and high-load scenarios.

Exceptional Reliability and Stability

Featuring global wear leveling, LDPC error correction algorithms, and FFU (Field Firmware Update), the BIWIN ePoP LPDDR4X delivers stable operation under long-term, high-intensity usage. These advanced features provide continuous, high-performance support for mission-critical applications and demanding environments.

Tailored Customization Services

BIWIN offers a full range of hardware customization and packaging/testing services, leveraging proprietary firmware to deliver key features such as fast boot, ultra-low power consumption, and SoC optimization. Custom versions are provided based on each customer's specific requirements, delivering precise, high-quality solutions tailored to unique requirements.

Technologies

- Write Protection
- Quick Erase
- Wear Leveling
- Garbage Collection
- TRIM Command

Applications

- Smart Wearable
- VR / AR

Specifications

Model Name	ePoP LPDDR4X
Interface	eMMC 5.1 + LPDDR4X
Capacity	32 GB + 16 Gb, 64 GB + 16 Gb, 64 GB + 32 Gb
Performance	**eMMC 5.1:** Sequential Read: 290 MB/s Sequential Write: 150 MB/s **LPDDR4X:** Up to 4266 Mbps
Operating Voltage	**eMMC 5.1:** V_{CC} = 3.3 V V_{CCQ} = 1.8 V **LPDDR4X:** V_{DD1} = 1.8 V V_{DD2} = 1.1 V V_{DDQ} = 0.6 V
Dimensions	8.00 × 9.50 mm, 8.60 × 10.40 mm
Packaging	ePoP 144 Ball
Operating Temperature	-25°C to + 85°C
Storage Temperature	-40°C to + 85°C
Supported Platforms	Ingenic, Qualcomm, Unisoc
Warranty	3-Year Limited

Order Information

Capacity	Part Number	Packaging	Dimensions
32 GB + 16 Gb	BWCK1EZH-32G-X	FBGA144	8.00 × 9.50 mm
32 GB + 16 Gb	BWCL1EZC-32G-X	FBGA144	8.60 × 10.40 mm
64 GB + 16 Gb	BWCK1EZC05-64G	FBGA144	8.00 × 9.50 mm
64 GB + 32 Gb	BWCK1KZC02-64G	FBGA144	8.00 × 9.50 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 life cycle. 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.biwintechnology.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

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www.biwintechnology.com