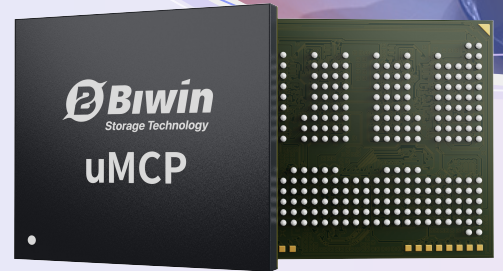


BIWIN uMCP (UFS 3.1 + LPDDR5X)

The BIWIN uMCP (UFS 3.1 + LPDDR5X) series is a highly integrated Multi-Chip Package (MCP) storage solution combining UFS 3.1 flash storage with the latest-generation LPDDR5X ultra-low-power mobile DRAM. Built in a compact 11.50 × 13.00 mm 297-ball FBGA package, BIWIN uMCP (UFS 3.1 + LPDDR5X) is specifically designed for premium mobile devices requiring both high performance and space-efficient board design.

Current configurations are built on the SM2753 controller platform, with capacity combinations ranging from 128 GB + 64 Gb to 512 GB + 64 Gb. BIWIN also specializes in customized solutions based on customer requirements.

Delivering high data throughput, ultra-low latency, and improved power efficiency, BIWIN uMCP (UFS 3.1 + LPDDR5X) is well suited for next-generation flagship smartphones, premium tablets, and other advanced smart devices with demanding storage and memory performance requirements.



Key Features

Ultra-Compact Multi-Chip Package

By combining UFS 3.1 flash and LPDDR5X DRAM into a single package, BIWIN uMCP delivers powerful performance in a more compact 11.50 x 13.00 mm 297-ball FBGA form factor. Its highly integrated design reduces PCB footprint and routing complexity, creating more space for larger batteries and slimmer designs, enabling next-generation mobile hardware.

Flexible Multi-Die Architecture for Scalable Package Capacity

Designed to support a wide range of application tiers, BIWIN uMCP (UFS 3.1 + LPDDR5X) features flexible multi-die NAND configurations with storage capacities of 128 GB, 256 GB, and 512 GB. Paired with a 64 Gb LPDDR5X DRAM configuration, it delivers the memory and storage scalability required for devices ranging from mid-range to flagship mobile platforms. Capable of handling data-intensive 5G workloads, multiple high-res cameras, and AR/VR applications for mainstream smartphones.

Flagship Controller, Cutting-edge Performance

Powered by the Silicon Motion SM2753 flagship controller platform designed for high-end embedded applications, BIWIN uMCP (UFS 3.1 + LPDDR5X) leverages cutting-edge LPDDR5X and UFS 3.1 to accelerate multitasking, large game loading, and AI computing workloads with smooth, responsive performance. The package delivers almost a 50% increase in DRAM bandwidth and doubles UFS storage speeds compared to previous-generation hardware.

Optimized Power Efficiency

Leveraging the advanced power architecture of LPDDR5X and deep firmware optimization of the controller platform, BIWIN uMCP (UFS 3.1 + LPDDR5X) delivers sustained performance with improved power efficiency (KIOPS/Watt). The optimized power profile helps extend battery life and avoids thermal throttling under sustained high performance demands.

Technologies

UFS 3.1

LPDDR5X

FBGA

Advanced Die Stacking

Intelligent Power Management

Applications



Smart phone



Tablet



AR/VR/XR



Intelligent automotive cockpit systems



IoT



Autonomous Mobile Robots



Edge-AI Vision systems

Specifications

Model Name	uMCP (UFS 3.1 + LPDDR5X)		
Interface	UFS 3.1 + LPDDR5X		
Capacity	128 GB + 64 Gb	256 GB + 64 Gb	512 GB + 64 Gb
DRAM Type	LPDDR5X		
Performance (UFS 3.1)	Sequential Read: 2000MB/s Sequential Write: 1800MB/s		
Performance (LPDDR5X)	Up to 8533 MT/s		
Operating Voltage (UFS 3.1)	VCC = 3.3 V VCCQ = 1.2 V		
Operating Voltage (LPDDR5X)	VDD1 = 1.8 V VDD2H = 1.05 V VDD2L = 0.9 V VDDQ = 0.3 V / 0.5 V		
Dimensions	11.50 x 13.00 mm		
Controller	SM2753		
Packaging	FBGA 297 ball		
Operating Temperature	-25°C to +85°C		
Storage Temperature	-40°C to +85°C		
Supported Platforms	HiSilicon, MediaTek, Qualcomm, Samsung		
Certifications	CE, FCC, RoHS, REACH, WEEE, HF, China RoHS		
Warranty	3-Year Limited		

Order Information

Capacity	Part Number
128 GB + 64 Gb	BW3A2EYAKG-128G
256 GB + 64 Gb	BW3A2EYAKG-256G
512 GB+ 64 Gb	BW3B1MYAKG-512G

1. Tested by BIWIN labs. Actual performance may vary due to systems, devices, or environment.
2. BIWIN will continue to provide updates and support throughout its lifecycle. Specifications are subject to change without prior notice.
3. Due to strong market demand for current components and materials, lead times may vary. Please contact your sales representative for the latest delivery schedule.
4. For storage capacity, 1 gigabyte (GB) = 1 billion bytes. A memory capacity of 64 Gb is equivalent to approximately 8 GB (gigabytes).
5. For more information, please contact your dedicated sales representative or email sales@biwintech.com

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