

High Bandwidth Memory Market: Segmented: By Product (GPU, CPU, APU, FPGA, ASIC); By Application (Graphics, High-Performance Computing, Networking, And Data Centers); , And Region – Global Analysis of Market Size, Share & Trends For 2019–2020 And Forecasts To 2031

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Abstracts

[170 + Pages Research Report] High Bandwidth Memory Market to surpass USD 4.9 billion by 2031 from USD 1.8 billion in 2021 at a CAGR of 32.9% in the coming years, i.e., 2021-31.

Product Overview

High bandwidth memory is a high-performance random access memory interface for 3D stacked dynamic random access memory, as well as high-performance graphics accelerators and network devices. TSV-based stacked dynamic random access memory uses a hybrid memory cube as a high-performance random access memory interface. Due to their tiny form size, high bandwidth, and low cost, hybrid memory cubes, and high bandwidth are a viable solution for standard DRAM (dynamic random-access memory).

Market Highlights

High Bandwidth Memory market is expected to project a notable CAGR of 32.9% in 2031.

The growing demand for memories with high bandwidth, low power consumption, and great scalability is driving the development of various 3D-stacked memories. With the rise of Big Data, the Internet of Things (IoT), and other data-intensive applications, there

is an increased demand for technology that can process and store more data efficiently.

Global High Bandwidth Memory: Segments

APU segment to grow with the highest CAGR during 2021-31

Global High Bandwidth Memory market is segmented by product into GPU, CPU, APU, FPGA, ASIC During the forecast period; the market for APUs is predicted to develop at the fastest rate. HBM-based APUs are a new AMD (US) innovation designed to fulfill the demands of high-performance computing. On a single SoC, APUs combines GPU and CPU capabilities. By removing connections between chips, APUs' overall energy efficiency improves even more. Graphics programmes can also be run on APUs. Additionally, AMD (US), the world's largest APU manufacturer, presented an APU with integrated HBM and stacked non-volatile memory cells. This will help to accelerate the use of APUs in computing applications.

Graphics segment to grow with the highest CAGR during 2021-31

Global High Bandwidth Memory market is segmented by application into Graphics, High-performance Computing, Networking, and Data Centers. During the projection period, the HMC and HBM market for graphics applications is predicted to develop at the fastest CAGR. The vast majority of HBM-enabled products on the market are GPUs. HBM was first used in graphics cards for graphics applications. For example, AMD (US) and SK Hynix (South Korea) created HBM technology for usage in GPUs. APUs, in addition to GPUs, have been brought to the market and are increasingly used for gaming applications. The growing use of HMC and HBM in gaming is partly due to the need to process large numbers of pixels for larger screens and to enable greater compute rates for better stability in high-end gaming.

Market Dynamics

Drivers

Great scalability

The growing demand for memories with high bandwidth, low power consumption, and great scalability is driving the development of various 3D-stacked memories. In the network system, there is also a large demand for high-efficiency and high-performance memory for data packet buffering, data packet processing, and storage applications above 100 Gbps. HMC and HBM, which have a bandwidth of more than 100 Gbps, could be a viable DRAM replacement as they reach comparable speeds while

consuming far less power. Furthermore, these technologies are constantly improving on the market.

Increasing big data

The Internet of Things has resulted in a significant amount of data being generated. Furthermore, Big Data applications such as business analytics, scientific computing, financial transactions, social networking, and search engines are fast growing in popularity. To attain high processing throughput, all of these applications handle enormous datasets and require high-performance IT infrastructures. According to information presented at the National Association of Software and Services Companies.

Restraint

Hindrance caused by thermal effect

HMC and HBM are DRAM stacks with micro bumps and TSVs connecting them internally to TSVs and externally to one or more chips. Even though these technologies have various advantages, manufacturers face a significant difficulty due to thermal concerns produced by the high level of integration and their impact on the overall module. These technologies provide extremely dense multi-level integration per unit footprint, posing thermal management problems.

Global High Bandwidth Memory: Key Players

Micron

Company Overview, Business Strategy, Key Product Offerings, Financial Performance, Key Performance Indicators, Risk Analysis, Recent Development, Regional Presence, SWOT Analysis

Samsung

SK Hynix

Advanced Micro Devices

Intel

Xilinx

Fujitsu

Nvidia

IBM

Open-Silicon

Cadence

Marvell

Other Prominent Players

Global High Bandwidth Memory: Regions

Global High Bandwidth Memory market is segmented based on regional analysis into five major regions: North America, Latin America, Europe, Asia Pacific and the Middle East and Africa. North America accounted for XX percent of the market in 2021, and the region is expected to grow at a CAGR of XX percent over the next decade. High-performance computing (HPC) applications that require high-bandwidth memory solutions for quick data processing are driving the adoption of HMC and HBM memories in North America. The expanding market for AI, machine learning, and cloud computing is driving up demand for HPC in North America. Furthermore, key HPC-based CPU and processor manufacturers, such as Intel, are headquartered in North American countries. Other major tech firms with US headquarters, such as Google, Amazon, and Microsoft, have fueled demand for high-performance CPUs in servers and supercomputers.

Global High Bandwidth Memory is further segmented by region into:

North America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United States and Canada

Latin America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – Mexico, Argentina, Brazil and Rest of Latin America

Europe Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United Kingdom, France, Germany, Italy, Spain, Belgium, Hungary, Luxembourg, Netherlands, Poland, NORDIC, Russia, Turkey and ,Rest of Europe

Asia Pacific Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – India, China, South Korea, Japan, Malaysia, Indonesia, New Zealand, Australia and Rest of APAC

Middle East and Africa Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – North Africa, Israel, GCC, South Africa and Rest of MENA

Global High Bandwidth Memory report also contains analysis on:

High Bandwidth Memory Segments:

By application

Graphics

High-performance Computing

Networking

Data Centers

By product

GPU

CPU

APU
FPGA
ASIC
High Bandwidth Memory Dynamics
High Bandwidth Memory Size
Supply & Demand
Current Trends/Issues/Challenges
Competition & Companies Involved in the Market
Value Chain of the Market
Market Drivers and Restraints
High Bandwidth Memory Market Report Scope and Segmentation
Report Attribute
Details

Market size value in 2021 USD 1.8 billion
Revenue forecast in 2031 USD 4.9 billion
Growth Rate
CAGR of 32.9% from 2021 to 2031

Base year for estimation 2020
Quantitative units Revenue in USD million and CAGR from 2021 to 2031
Report coverage
Revenue forecast, company ranking, competitive landscape, growth factors, and trends

Segments covered Product, Application and Region
Regional scope North America, Europe, Asia Pacific, Latin America, Middle East & Africa (MEA)
Key companies profiled Samsung (South Korea), Micron (US), SK Hynix (South Korea), Intel (US), Advanced Micro Devices (AMD) (US), Xilinx (US), Fujitsu (Japan), NVIDIA (US), IBM (US), and Open-Silicon, Inc.(US), and Other Prominent Players .

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**The above given segmentations and companies could be subjected to further modification based on in-depth feasibility studies conducted for the final deliverable.

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