# Utmel: Memory chip trends in 2023

*In 2023, the downward trend of memory chips is still continuing, when to stop falling is still unknown.*

HONGKONG, CHINA, March 28, 2023 /EINPresswire.com/ -- In 2022, memory chips are undoubtedly the most severely impacted chip category in the semiconductor down cycle. As we enter 2023, the downward trend of memory chips continues, and it is still unknown when the decline will stop.

From the second half of 2021, the length of the memory chip price decline has been more than 18 months. DRAM and NAND Flash two major memory chip prices have been down for as long as 20 months. Although all major analysts believe that the current price of memory chips is close to the bottom, the decline has narrowed, but the downward trend is still continuing.

Utmel said that global smartphone shipments (wholesale) and sales (retail) in February 2023 fell 11% and 5% year-on-year, respectively. As the three major end-demand drivers of memory chips, the smartphone market's sluggishness undoubtedly makes the recovery of memory chip demand add insult to injury.

Of course, memory chips also appear in some segments of good information, such as ChatGPT demand for high-bandwidth memory chips soared, automotive intelligence, and high-end manufacturing information upgrades will also drive the growth of demand for memory chips. However, these segments of demand can hedge the overall downward trend of memory chips, which is still unknown.

Memory chips as the second largest proportion of integrated circuits occupy a core position in the industry, and the boom of the semiconductor and consumer electronics industry has an important role in pointing out. And cut orders, production cuts, and plummeting prices in 2023 continue to affect the memory chip industry.

From the second half of 2022, Samsung, Micron Technology, Western Data, Hynix, Armor Man, and other storage chip majors have responded to the weak market trend by cutting production and reducing inventory. in the first quarter of 2023, Armor Man and Micron production lines continued to be under load, and Western Data and SK Hynix followed up with production cuts in an effort to cross the industry winter.

From the data of some analysts, the efforts of major manufacturers have played a significant role in slowing down the decline of storage chip prices. in the fourth quarter of 2022, global

DRAM and NAND flash prices fell by about 20%-25%, and the decline in DRAM prices is expected to narrow to 13%-18% in the first quarter of 2023, and NAND flash prices fell by about 10%-15%. This also makes the industry generally expects the timetable for an industry rebound to get closer.

Because of the inherent cyclical nature of memory chips, the market size of DRAM and NAND Flash, the most important products, also has significant cyclical fluctuations, usually following a 3-4 year cycle of fluctuations. According to this rule, the last boom high point of memory chips is 2021, and the growth trend is expected to resume by the end of 2023.

Some industry experts analyze that the trend of the storage chip industry in 2023 is expected to show polarization: on the one hand, the low-end chip product inventory continues to be high, and prices have fallen significantly; on the one hand, some high-end chip market demand is increasingly robust, due to slow rise in production capacity and other reasons, the contradiction between supply and demand is still prominent, and even face "a core hard to find "the situation. Among them, the most representative is a large increase in orders for high-bandwidth memory chips.

The emergence of ChatGPT will promote the application of AI on the ground, which also gives rise to the demand for high-performance chips. Benefiting from ChatGPT, HBM orders from Samsung Electronics and SK Hynix have increased significantly since early 2023, and prices have rebounded significantly.

ChatGPT quickly attracted widespread attention worldwide after its release, and major vendors announced their GPT model development plans one after another. The training and application of large models represented by GPT models bring a significant increase in the underlying computing power demand, and accordingly, a large number of AI chips are required to provide computing power support for them. Training AI models require large-scale data sets, and the more data stored in the AI chip, the faster the training of large models and the higher the training accuracy. As a result, ChatGPT training volumes have increased dramatically, and the lowest-level infrastructure requires large arithmetic chips and memory chips.

HBM is a DRAM memory chip technology based on a 3D stacking process that dramatically increases data processing speed, and ChatGPT development has led to a huge increase in third-generation HBM offers. HBM is a DRAM memory chip based on a 3D stacking process that is installed in GPUs, network switching devices, AI gas pedals, and high-performance servers. HBM can dramatically increase data processing speed, with a bandwidth per watt that is more than HBM can dramatically increases data processing speed, with more than three times higher bandwidth per watt than GDDR5, and HBM saves 94% of surface area compared to GDDR5. The ultra-high bandwidth memory technology generation class model represented by HBM will also accelerate HBM memory to further increase capacity and increase bandwidth. Third-generation HBM offers a big jump, about five times the performance of the highest DRAM products.

Of course, the rapid advancement of automotive intelligence and the upgrade of high-end manufacturing information will also drive strong market demand in the automotive, industrial, and medical industries. Although the overall market size of automotive storage chips is roughly one-tenth of the cell phone storage market, the rapid development of the automotive storage segment under the general trend of smart connected car development is expected to provide new growth momentum for the storage industry, with a CAGR of 18.6% from 2021-2027, according to Utmel's forecast.

In addition, 5G base stations, artificial intelligence, the Internet of Things, data centers, smart homes, wearable devices, and other emerging applications continue to emerge, will have higher requirements for power consumption, security, transmission rate, volume, and cost of storage chips, will also provide important drivers for the storage chip market.

Alan Smith
Utmel Electronic CO.,LTD
+86 131 8975 2889
email us here
Visit us on social media:
Facebook
Twitter
LinkedIn

---