

Computer and Peripherals Standard Logic IC - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Computer and Peripherals Standard Logic IC Market is expected to register a CAGR of 5.8% during the forecast period.

A logic gate serves a logical operation on one or more logic inputs and produces a single logic output. The logic typically performed is Boolean logic, commonly found in digital circuits. Logic gates are primarily implemented electronically utilizing diodes or transistors but can also be constructed using electromagnetic relays, fluidics, optics, molecules, or even mechanical elements. In electronic logic, a logic level is represented by a voltage or current (depending on the type of electronic logic used).

Basic logic gates are available from numerous manufacturers as industry-standard ICs, which are functionally and pin-compatible. These ICs are called standard logic ICs. Standard logic ICs from various manufacturers are housed in pin-compatible packages, except for some small packages. Standard logic ICs with the same function number provide the same function and pin assignment.

According to the Organisation for Economic Co-operation and Development survey, By 2025, the number of households having a computer is expected to increase to 1,262.47 million. Homes with at least one computer are referred to as computer households. Such a huge increase in computer adoption will create an opportunity for the market players to expand their standard logic IC product portfolio, expand their presence in different regions, and increase their market share.

Adopting digitalization in various industries like education, BFSI, etc., is aiding in expanding the studied market. For instance, in April 2022, HSBC and IBM formed a three-year partnership to investigate quantum computing's possibilities in the banking business. HSBC would look into how quantum computers can be used for pricing and portfolio optimization, as well as identifying and correcting fraudulent behavior as it works toward its net zero targets. Based in the United Kingdom, the bank plans to train its

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workers in quantum technology and hire quantum computing research experts to join its innovation team. Such collaborations and usage of quantum computing will create an opportunity for the studied market to grow.

On the flip side, the increasing design complexity with increasing applications and the constant evolution of products influencing demand are likely to restrain the growth of the studied market.

Computer & Peripherals Standard Logic IC Market Trends

Increased Consumer Demand for Advanced Computers and Peripherals

The COVID-19 pandemic has changed how people use technology to live, work, play, and communicate. The PC market experienced its first substantial growth in 2020 when the pandemic began to force people to work and learn from home. The pandemic has revved the PC market, with increased demand from working professionals, students, and gamers, allowing several notable players to launch advanced products.

For instance, in October 2021, Microsoft launched Windows 11 after declaring 'the PC is back' at the start of the pandemic due to a big jump in Windows usage. AMD and Intel have also launched their latest laptop chips at CES 2022.

During the first pandemic wave, the demand for PCs emerged from the necessity to move from 'one PC per home' to 'one PC per person.' The second pandemic wave accelerated demand as organizations and consumers were driven to adapt to online education, remote work, and other day-to-day requirements.

Consumers are also becoming more discerning as they seek premium designs in diverse form factors for work, learning and gaming. The demand for advanced gaming PCs among students and young working professionals has increased with a booming gaming ecosystem and competitive esports tournaments.

The market witnessed an exponential growth in demand for gaming PCs that are sleek in design and offer desktop-like performance for gaming and other intensive workloads. For instance, globally, in 2021, AMD's computing and graphics segment grew 32% y-o-y to USD 2.6 billion, propelled by both Ryzen and Radeon processor sales. The factors mentioned above significantly contribute to the growth of the studied market.

The Asia Pacific Region is Expected to Witness a High Market Growth

According to China's National Bureau of Statistics, China produced approximately 32.66 million completed computers in April 2022. Furthermore, according to the Ministry of Electronics and Information Technology, the value of computer hardware output in India was roughly INR 215 billion in the fiscal year 2020. In 2021, this rose to INR 220 billion. The value of computer hardware produced in the country has been steadily increasing. Such massive spending on computer production will allow the local computer and peripherals standard logic IC manufacturers to expand their product portfolio.

The regional companies are producing different standard logic IC products to meet the rising demand of the customer in the region and increase their market share by incorporating new features and developments into the existing products. For example, Rohm Semiconductor, a Japan-based company, provides standard logic IC products to cater to the specific needs of consumers. The product family consists of analog switches, multiplexers, logic gates, and function logic.

Furthermore, Various standard 5400/7400 logic family kinds are in high demand, boosting the standard logic IC devices market's prospects in the region. The rising popularity of integrated circuits (ICs) can be attributed to their ease of use and availability. However, in the conventional logic devices industry, there is a need to improve the sophisticated functionality of products. In

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recent years, there has been a greater emphasis on enhancing this element. Standard logic IC devices are limited in complex functions due to their defined functionality. In addition, many chips must be placed on a printed circuit board (PCBs). The items are available off-the-shelf.

The government bodies in the region are announcing new schemes to increase the production of semiconductors. Such initiatives by the government will drive the studied market. For Instance, in December 2021, To establish India as a worldwide hub for hi-tech production and attract multinational chip makers, the Indian government approved a Rs 76,000-crore scheme to expand semiconductor and display manufacturing. The new mission, led by world specialists in the semiconductor and display industries, will serve as the plan's nodal agency, ensuring that the scheme is implemented efficiently and smoothly. India wants to increase electronics manufacturing from USD75 billion to USD 300 billion in the next six years, and semiconductor chips are an essential element of that ecosystem.

Furthermore, In May 2021, South Korea announced ambitious plans to spend almost USD 450 billion over the next decade to develop the world's largest chipmaking base, joining China and the United States in a worldwide contest to control the critical technology. Under a national program created by the President's administration, Samsung Electronics Co. and SK Hynix Inc. would lead more than KRW 510 trillion in investment in semiconductor research and manufacture in the years through 2030.

Computer & Peripherals Standard Logic IC Industry Overview

The Computer and Peripherals Standard Logic IC Market is moderately fragmented with prominent players like Diodes Incorporated, NXP Semiconductors NV, Texas Instruments Inc., Microchip Technology Inc., etc. The players in the market are innovating new products and processes through collaborations and extensive R&D investments to stay competitive.

June 2021 - Small and low-profile 14, 16, 20, and 24 pin packages for standard logic devices have been announced by Nexperia. In addition, the 16-pin DHXQFN package saves 25% on PCB space. The 0.4 mm pitch DHXQFN packages are only 0.45 mm high and measure 2 mm x 2 mm (14 pins), 2 mm x 2.4 mm (16 pins), 2 mm x 3.2 mm (20 pins), and 2 mm x 4 mm (24 pins). Hex inverting Schmitt triggers, 8-bit SIPO shift registers with output latches, 4-bit dual supply translating transceivers, octal buffer/line drivers, octal bus transceivers, and 8-bit dual supply translating transceivers are among the components included.

Sep 2021 - A series of GaN-based complementary logic ICs was developed by researchers at the Hong Kong University of Science and Technology (HKUST). They developed a power converter standard IC using GaN HEMTs (high-electron-mobility transistors). A power converter requires active switching devices like transistors and rectifiers, as well as peripheral circuits that enable their driving, sensing, protective, and control functions to be efficient and integrated. To fully use the capabilities of GaN HEMTs, it is preferable to integrate the active switches and peripherals into a single chip.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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