
Description: The global semiconductor assembly and testing services market is value projected for a value worth US$ 24.72 Bn by the end of 2016. The market is likely to witness moderate growth over the next five years and is estimated to expand at a CAGR of 5.8% during a six-year forecast period 2015-2021.

Wafer Fabrication Technology Remains a Cost-intensive Affair for Semiconductor Companies

The semiconductor processing technology is rapidly shifting to larger wafer fabrication with smaller feature size; however, wafer fabrication involves higher CAPEX and operational costs for testing and packaging. Building and maintaining a state-of-the-art factory for wafer fabrication is an expensive affair. Swelling costs of advanced packaging solutions are also expected to favour the SATS market. Semiconductor companies thus prefer to remain fabless and concentrate on their core capabilities, employing a third party expert for testing, assembly, and packaging of semiconductor assembly. This will primarily continue to create the demand for semiconductor assembly and testing service providers over the forecast period 2015-2021.

Superiority of SATS Providers Continues to Push Adoption

SATS providers operate in an efficient supply chain that functions at a reduced turnaround policy. Furthermore, these providers enable in-house testing and packaging, which is why serve a majority of integrated device manufacturers. These will remain the primary factors propelling the adoption of semiconductor assembly and testing service providers by 2021 end.

Fabless Companies Continue to Outsource Semiconductor Assembly, Testing, and Packaging

As the key players are fabless companies, which have to focus more on the design part in order to enhance the performance of ICs and chipsets, they often prefer outsourcing of semiconductor assembly, testing, and packaging services to third party SATS providers. Over half of the market is occupied by outsourced semiconductor assembly and testing (OSAT) services. This will continue to fuel the demand for SATS during the next few years.

Soaring Demand for Consumer Electronics Escalates the Demand for SATS Providers

The ever-growing need for connectivity and mobility is in turn bolstering the manufacturing and sales of consumer electronic devices, such as smartphones, tablets, PCs, laptops, wearables, AV devices, and gaming consoles. This is likely to spur the demand for high quality SATS providers in market. Moreover, the advent of technology in next-gen cars and automotive electronics will also possibly create a host of opportunities for SATS providers through to 2021.

Market Segmentation

Consumer Electronics Drive the Assembly and Packaging Service Segment

By service, assembly and packaging segment is likely to remain dominant over testing segment, with a remarkable CAGR over 2015-2021. This growth is primarily attributed to the proliferation of consumer electronics sector. Emergence of advanced packaging solutions will also indirectly drive this segment further.

Flip Chip Segment Gathers Higher Momentum in Terms of Packaging Solution

Based on packaging solution, copper wire and gold wire bonding segment will witness declining growth despite retaining the market dominance throughout the forecast period. This segment's revenues are predicted to reach over US$ 14 Bn by 2021 end, whereas the market share will see a decline from nearly 53% expected in 2016, to around 45% in 2021. However, the flip chip segment is anticipated to witness robust growth at a CAGR of 8.1% over 2015-2021, accounting for over 21% market share in 2021. Wafer level packaging segment will also exhibit a significant CAGR.
Communication Remains the Largest Application Segment

On the basis of application, communication segment is likely to maintain dominance over the forecast period. The consumer electronics application segment will however register stellar growth at the highest CAGR during 2015-2021.

Regional Segmentation

The global semiconductor assembly and testing services market is regionally segmented into four key markets:

- North America
- Europe
- Asia Pacific
- Middle East and Africa

Although APAC is expected to remain the leading market with over 86% share of the entire market, the author indicates that this region will witness a moderate CAGR over the forecast period, registering a steady decline in the Y-o-Y growth by 2021 end. However, North America is projected to observe stable growth throughout the forecast period, accounting for over 28% share in 2021.

Key Market Players

The leading companies competing in the global semiconductor assembly and testing services market are ASE Group, Amkor Technologies Inc., Silicon Precision Industries Co. Ltd., Psi Technologies Inc. (IMI), STATS ChipPAC Ltd. (JCET), Global Foundries, Powertech Technology Inc., Chipbond Technology Corporation, and CORWIL Technology corporation. A majority of the low-end service providers are currently competing on price-effective products. Key players are increasingly investing in R&D of innovative, cost-effective packaging solutions.

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