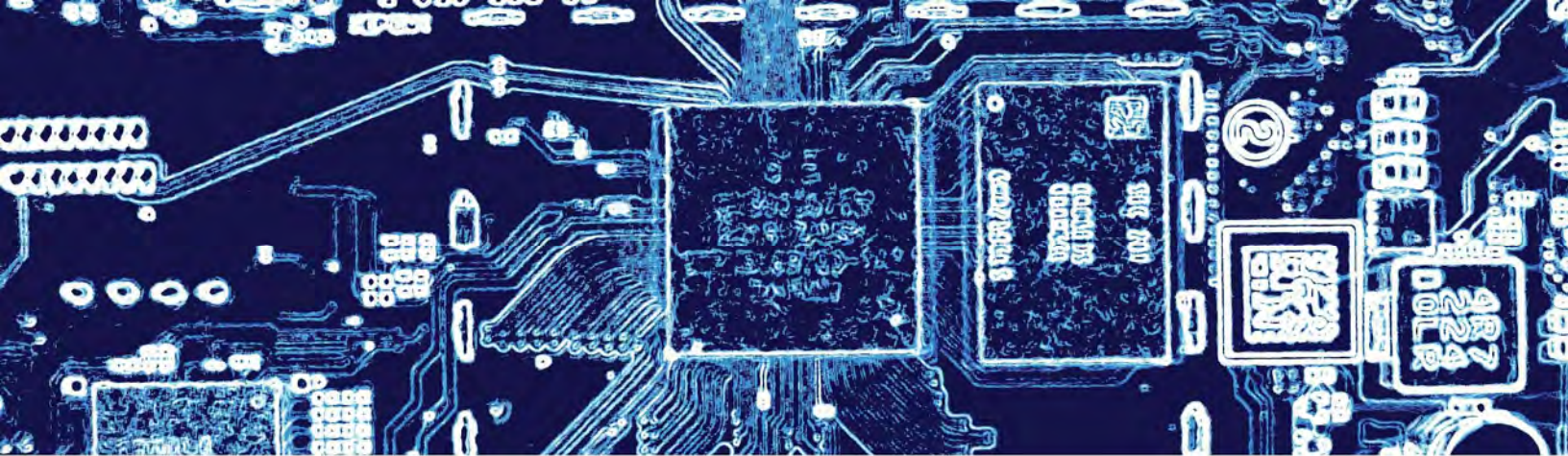


THE PRINTED CIRCUIT REPORT

PCB

December 2025 •
Third Quarter 2025

- The forty leading PCB suppliers, which account for over one-half of industry sales, reported an aggregate YoY revenue increase of 17.3% in the first three quarters of 2025. For Q3 2025, the increase in aggregate revenues is 19.0% QoQ and 14.5% YoY.
- Altogether, the global bare board PCB market is estimated to have increased to \$22.8Bn in Q3 2025 – representing a 10.0% increase from Q2 2025 and 15.2% growth from Q3 2024.
- Based on current trends, Prismark forecasts the PCB market to grow by 15.4% in value terms in 2025. In terms of board area, we project growth of 9.1% in 2025.
- Profitability of the leading public PCB companies has improved in 2025. Aggregate net profit margins for the leading public PCB companies grew from 6.5% in Q1-Q3 2024 to 8.1% in Q1 2025. Aggregate net profits, meanwhile, grew by 48.4% YoY and aggregate capex by 17.0% YoY during the first three quarters of 2025.
- The strong growth of the PCB market in 2025 is very much driven by AI investments:
 - The HDI board consumption by the server/data storage segment, for example, is doubling in 2025 compared to 2024, after having more than doubled already in 2024.
 - Strong demand for AI server and networking infrastructure is also driving high-layer-count ML boards to high double-digit growth.
 - All segments of the PCB industry are growing in 2025, although flex circuits, commodity and simple ML boards and are growing significantly slower than the other segments.
- ASP for some PCB products are rising, although some of this is due to higher raw material costs and/or the use of more advanced materials.
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market. The impact of US tariffs from China and elsewhere are discussed in detail.
 - Comprehensive data and analysis of the PCB market, showing revised forecasts for 2025, 2026, and 2029 by PCB technology and region of production.
 - A detailed discussion of the HDI board technology, with specific focus on AI server applications and the evolution toward CoWoP boards.

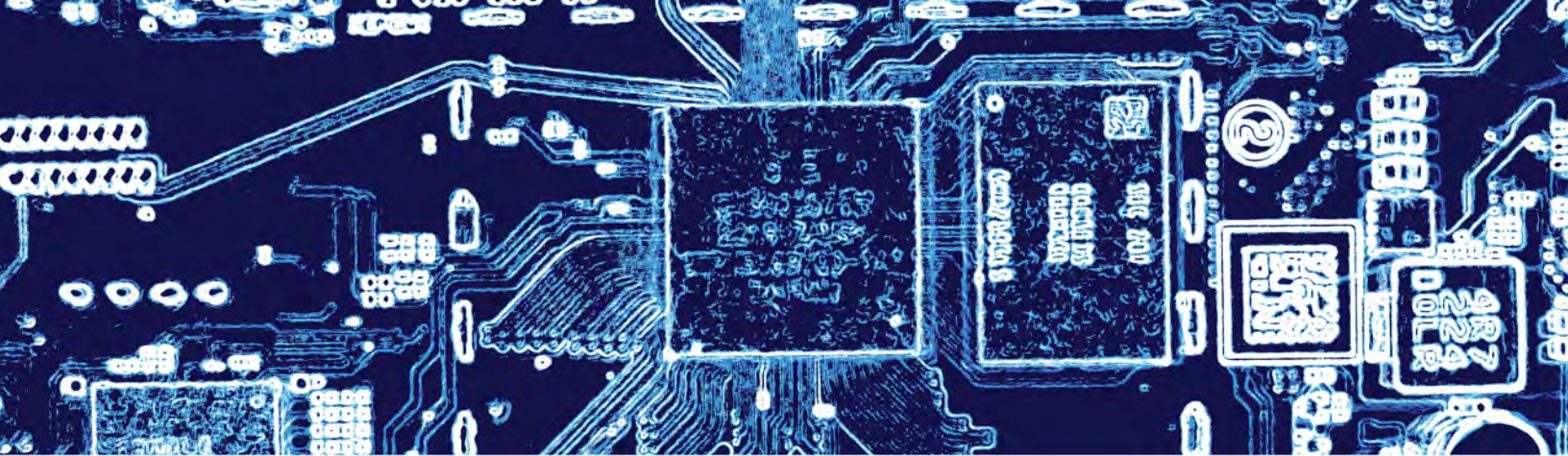


THE PRINTED CIRCUIT REPORT

PCB

September 2025 •
Second Quarter 2025

- The forty leading PCB suppliers, which account for over one-half of industry sales, reported an aggregate YoY revenue increase of 19.1% in 1H 2025. On a QoQ basis, their aggregate revenues grew by 13.1% in Q2 2025.
- Altogether, the global bare board PCB market is estimated to have increased to \$20.7Bn in Q2 2025 – representing a 11.7% change from Q1 2025 and 16.8% from Q2 2024.
- Based on current trends, Prismark forecasts the PCB market to grow by 12.8% in value terms in 2025. In terms of board area, we project growth of 10.3% in 2025.
- Profitability of the leading public PCB companies has improved significantly in the first half of 2025. Aggregate gross margins for the leading public PCB companies grew from 18.2% in 1H 2024 to 19.9% in 1H 2025. Aggregate net profits, meanwhile, grew by 40.1% YoY in 1H 2025.
- The PCB recovery in 2025 is very much driven by AI investments:
 - Strong demand for AI server and networking infrastructure is driving HDI and high layercount ML boards to high double-digit growth
 - All segments of the PCB industry are growing in 2025, although commodity boards and flex circuits are growing significantly slower than the other segments
 - ASP for some PCB products are rising, although some of this is due to higher raw material costs and/or the use of more advanced materials.
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing revised forecasts for 2025 and 2029 by PCB technology and region of production.
 - A detailed discussion of developments in the flexible circuit market and technology.

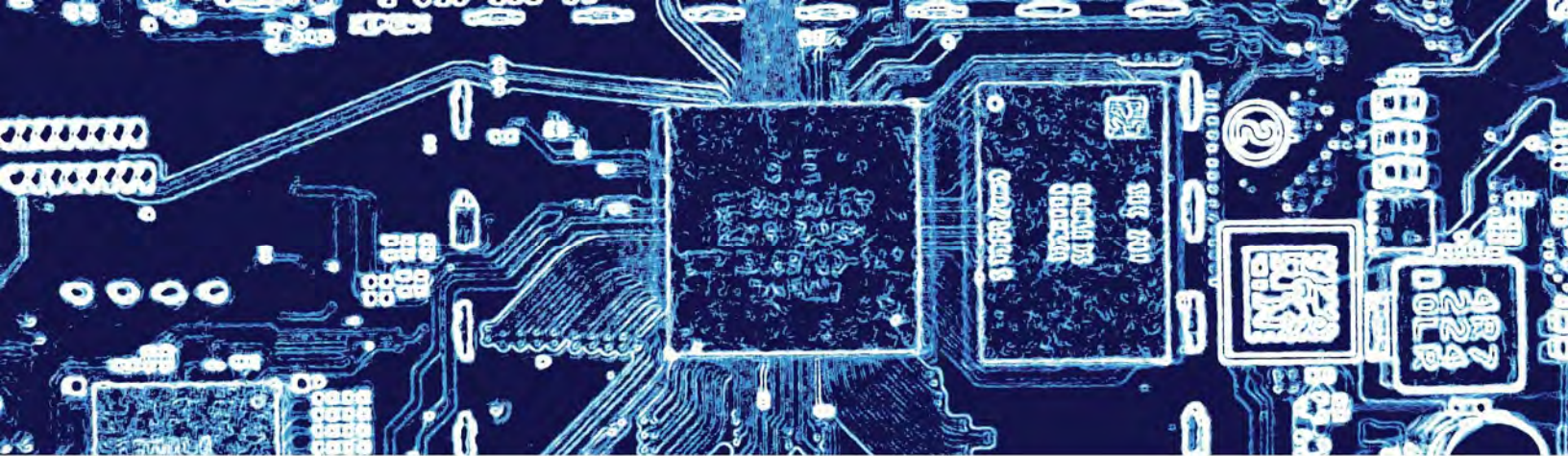


THE PRINTED CIRCUIT REPORT

PCB

July 2025 • First Quarter 2025

- The global PCB market typically declines strongly in the first quarter, due to seasonal purchasing patterns. This time the sequential decline was only modest, at -2.8% QoQ, and the market grew strongly compared to the previous year, at +12.1% YoY.
- The forty leading PCB suppliers, which account for over one-half of industry sales, reported aggregate YoY revenue growth of 13.1% in Q1 2025, much better than in the previous year. Compared to Q4 2024, aggregate revenues decreased by 7.6% due to seasonality, also much better than last year.
- Based on current trends, Prismark forecasts the PCB market to grow by 7.6% in value terms in 2025. In terms of board area, we project 7.8% growth.
- The PCB recovery in 2025 will not be evenly distributed across all segments, but all regions and all PCB segments are expected to grow:
 - Strong demand for AI server and networking infrastructure will boost high-layercount multilayer boards to unusually strong growth of 41.7% by value in 2025.
 - The HDI market will also be boosted by the AI market, as well as other applications that transition to HDI boards. The HDI market is forecast to grow by 12.9% in 2025.
 - China is expected to register the fastest PCB growth in 2025, followed by Asia (ex. Japan and China).
- This report also includes Prismark's latest annual top 100 PCB company rankings. Zhen Ding, Unimicron, and Dongshan Precision are again the top 3 global PCB suppliers in 2025.
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing estimates for 2024 and revised forecasts for 2025 and 2029 by PCB technology and region of production.
 - A detailed discussion of developments in the multilayer board market and technology.

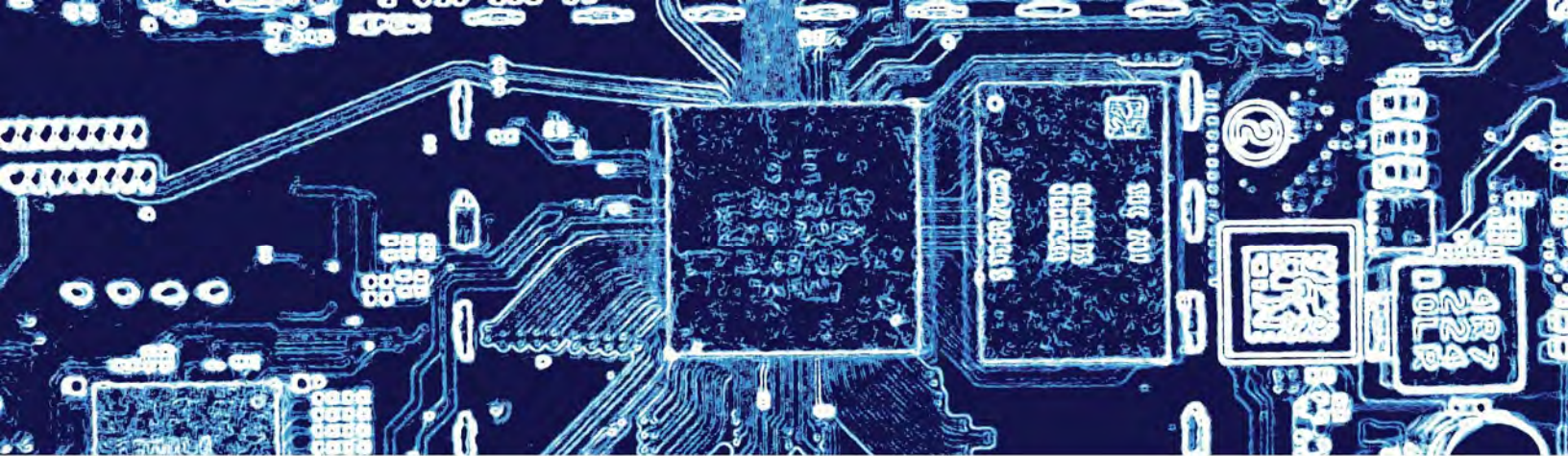


THE PRINTED CIRCUIT REPORT

PCB

December 2024 • Third
Quarter 2024

- The forty leading PCB suppliers, which account for over one-half of industry sales, reported an aggregate YoY revenue of 10.2% growth in Q3 2024 (+15.0% QoQ). During the first three quarters of 2023, revenues for these 40 companies grew by 7.6% compared to the same period in 2023.
- PCB suppliers to the AI server and associated high-speed networking market, including HDI and HLC+HDI boards, performed best so far in 2024. The best companies grew by 40% or stronger YoY in Q3 2024.
- FPC suppliers also performed very well in Q3 2024, benefiting from the typical seasonal boost from smartphone and portable consumer products.
- Most package substrate suppliers, especially those of high-end ABF substrates, continue to suffer from overcapacity, inventory issues and ASP erosion.
- Altogether, the leading public PCB companies increased their net profit by 8.1%, but the net profit margin remained steady at about 6.5%. Capex declined by about 10% YTD compared to the previous year, reflecting the buildout of capacity in prior years, and the cautious stance as market uncertainty grows.
- Altogether, the global bare board PCB market is estimated to have increased to \$19.6 Bn in Q3 2024 – representing a 8.1% increase from Q3 2023 and a 10.9% increase from Q2 2024.
- Based on current trends, Prismark forecasts the PCB market to continue to recover through the end of 2025, apart from the typical seasonal decline. YoY growth in the PCB market is expected to be 5.8% in 2024 and 6.1% for 2025.
- Prismark's five-year outlook for PCB production value is forecasted to expand from \$73.6Bn in 2023 to \$91.1Bn in 2028, equating to a five-year compound annual growth rate of +5.6%.
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market. The impact of US tariffs from China and elsewhere are discussed in detail.
 - Comprehensive data and analysis of the PCB market, showing revised forecasts for 2024, 2025, and 2028 by PCB technology and region of production.
 - A detailed discussion of the HDI board technology.

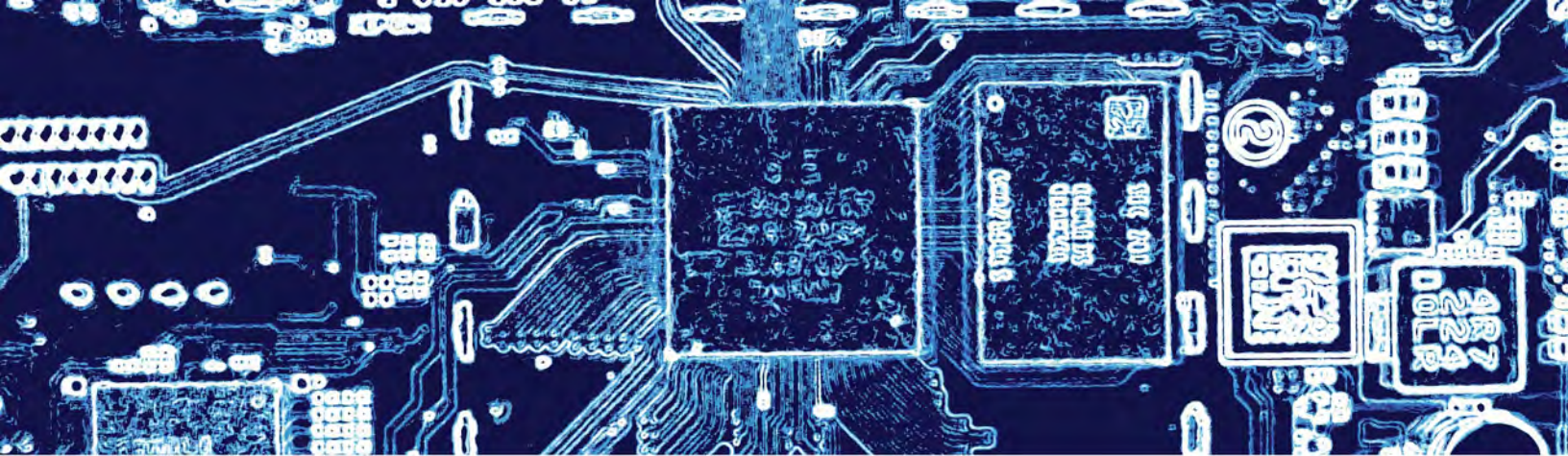


THE PRINTED CIRCUIT REPORT

PCB

September 2024 • Second
Quarter 2024

- The forty leading PCB suppliers, which account for over one-half of industry sales, reported an aggregate YoY revenue increase of 6.3% in 1H 2024 (7.1% Q2 2024/Q1 2023).
- Altogether, the global bare board PCB market is estimated to have increased to \$17.7Bn in Q2 2024 – representing a 5.7% change from Q1 2024 and 6.8% from Q2 2023.
- Based on current trends, Prismark forecasts the PCB market to grow by 5.5% in value terms in 2024. In terms of board area, we project growth of 6.6%.
- Along with collapsing revenues, the PCB industry experienced a significant decline in profitability in 2023 but has slightly recovered in the first half of 2024. Aggregate gross margins for the leading public PCB companies grew from 17.8% in 1H 2023 to 18.2% in 1H 2024. Aggregate net profits, meanwhile, grew by 21% YoY.
- The PCB recovery in 2024 will not be evenly distributed across all segments:
 - Strong demand for AI server and networking infrastructure will drive HDI and high layercount ML boards to high double-digit growth
 - Certain segments, including low-end rigid boards and some substrate products, will continue to struggle with ASP declines through 2H 2024
 - Rising materials costs may also become a significant issue for certain suppliers with limited bargaining power
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing revised forecasts for 2024 and 2028 by PCB technology and region of production.
 - A detailed discussion of developments in the flexible circuit market and technology.



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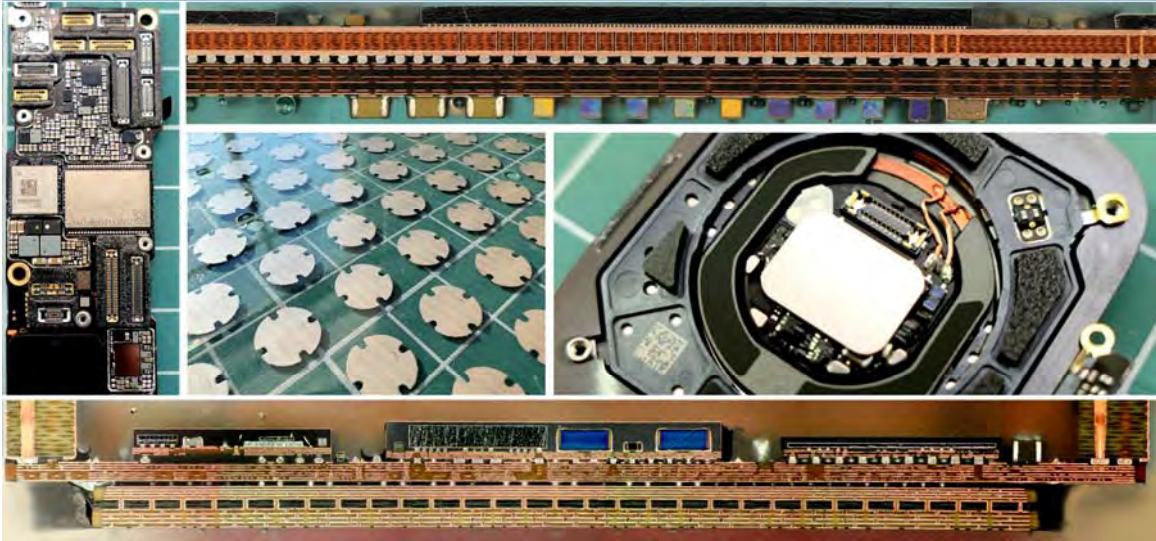
PCB

May 2024 • First Quarter 2024

- The global PCB market recovery approached a symbolic milestone in Q1 2024. After six straight quarters of production value declines, year-over-year growth nearly broke even at -0.1% compared to Q1 2023.
- The forty leading PCB suppliers, which account for over one-half of industry sales, reported aggregate YoY revenue growth of 2.0% in Q1 2024. Compared to Q4 2023, aggregate revenues decreased 13.6% due to seasonality.
- Based on current trends, Prismark forecasts the PCB market to grow by 5.0% in value terms in 2024. In terms of board area, we project 7.2% growth.
- The PCB recovery in 2024 will not be evenly distributed across all segments:
 - Strong demand for AI server and networking infrastructure will drive HDI and high layercount ML boards to high double-digit growth
 - Certain segments, including low-end rigid boards and some substrate products, will continue to struggle with ASP declines through 2H 2024
 - Rising materials costs may also become a significant issue for certain suppliers with limited bargaining power
- This report also includes the third edition of Prismark's top 100 PCB company rankings. Zhen Ding, Unimicron, and Dongshan Precision maintained their positions as the top 3 global PCB suppliers in 2023.
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing revised forecasts for 2024 and 2028 by PCB technology and region of production.
 - A detailed discussion of developments in the multilayer board market and technology.

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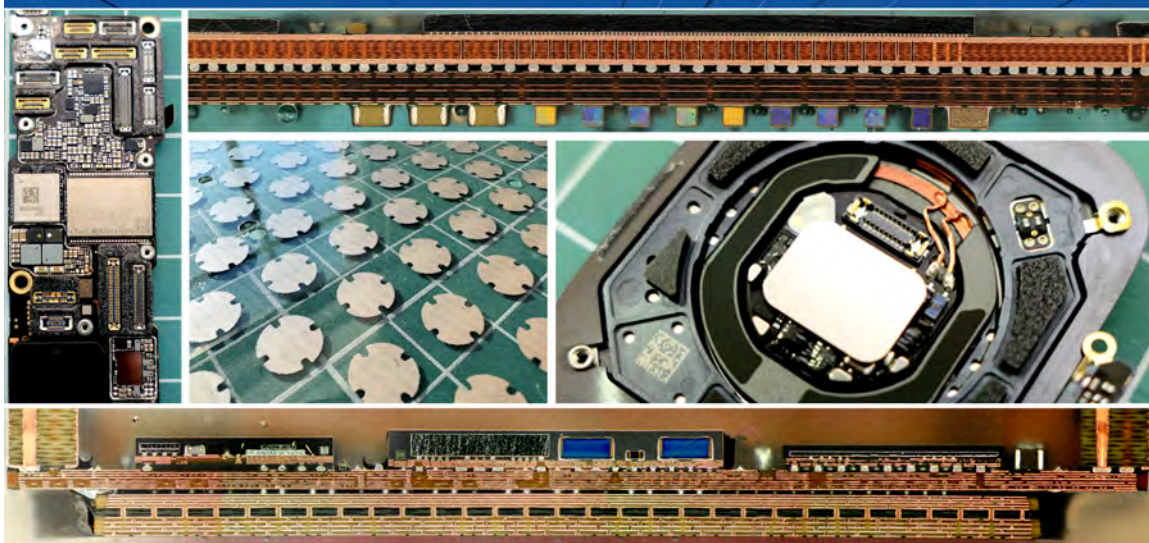
FOURTH QUARTER • FEBRUARY 2024



- SUMMARY OF IMPORTANT DEVELOPMENTS IN Q4 2023
 - The forty leading PCB suppliers, which account for over one-half of industry sales, reported an aggregate YoY revenue decline of -6.2% in Q4 2023 (+3.6% QoQ). For the full-year 2023, aggregate revenues for these 40 companies fell by 16.0% compared to 2022.
 - Oversupply, excess inventories, weak demand, price erosion, and currency effects drove every PCB product segment to negative growth in 2023, with the steepest decline coming in the package substrate market (-28.2%).
 - Steady progress in inventory normalization contributed to a gradual recovery in most segments in 2H 2023 and is expected to propel the PCB market to positive YoY growth in 1H 2024.
 - Recovery will take more time in the package substrate market, which declined by 25.3% YoY in Q4 2023 amidst ongoing supply adjustments and ASP erosion.
 - Total PCB production is estimated to have declined by 15% to just over \$69Bn in 2023. In volume terms, the decline was more modest at -4.7%. The disparity between volume and value growth reflects the severe ASP erosion that has plagued the PCB market since late 2022.
 - From a geographical perspective, PCB market growth in 2023 was weakest in regions that are heavily exposed to the package substrate market, including Japan, Korea, and Taiwan.
 - China fared relatively well thanks to its larger exposure to the rigid and MLB segments. The US and Europe also outperformed due to stable demand from the defense and medical/industrial markets, respectively.
 - Following a year of sectorwide declines, every PCB technology segment is forecast to report positive growth in 2024, albeit from a low 2023 base.
 - The total PCB market is projected to grow by 5% in value and 7.5% in volume terms. As these projections indicate, price erosion will continue to pose challenges, particularly in the first half of the year.
 - This report introduces Prismark's first forecast for the 2028 PCB market – the PCB market is projected grow at a 5.4% annual rate over the next five years to surpass \$90Bn in 2028. Meanwhile, volume shipments will grow by 6.8% annually to reach 558M m².
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing 2022 and updated forecasts for 2023, 2024, and 2028 by PCB technology and region of production.
 - A detailed discussion of market and technology developments in the package substrate segment.

THE PRINTED CIRCUIT REPORT

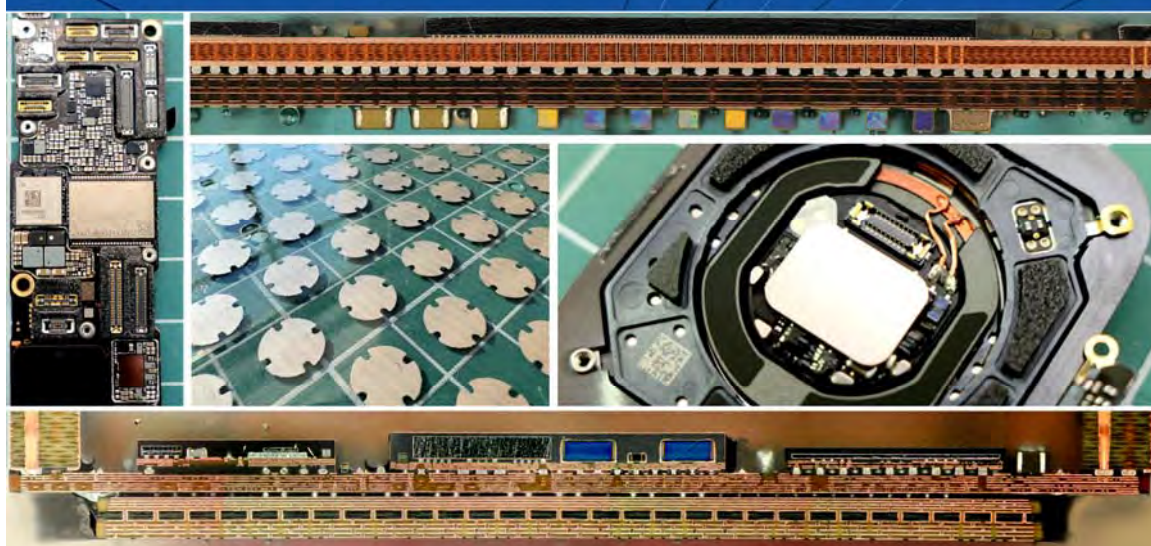
THIRD QUARTER • NOVEMBER 2023



- SUMMARY OF IMPORTANT DEVELOPMENTS IN Q3 2023
 - The forty leading PCB suppliers, which account for over one-half of industry sales, reported an aggregate YoY revenue decline in Q3 2023, grew QoQ. During the first three quarters of 2023, revenues for these 40 companies fell compared to the same period in 2022.
 - Weak demand, oversupplied inventories, and steep price erosion continue to pose significant challenges across the PCB industry, particularly in the package substrate segment.
 - While Q3 was another difficult quarter for the PCB industry as a whole, there were some signs of modest recovery heading into 2024
 - Only eight of the top 40 PCB companies reported positive YoY growth in Q3.
 - Altogether, the global bare board PCB market is estimated to have increased QoQ, but declined YoY.
 - Based on current trends, Prismark forecasts the PCB market to decline in value terms in 2023. In terms of board area, we project a more modest decline
 - The PCB market is likely to return to positive YoY growth against a low baseline by Q1 2024. However, given current projections for weak global economic growth in 2024, Prismark still does not anticipate a significant recovery for the PCB industry in 2024.
 - Prismark's five-year outlook has not changed from our previous report — PCB production value is forecasted to expand from 2022 to 2027, equating to a modest five-year compound annual growth
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing revised forecasts for 2023, 2024, and 2027 by PCB technology and region of production.
 - A detailed discussion of the HDI board technology.

THE PRINTED CIRCUIT REPORT

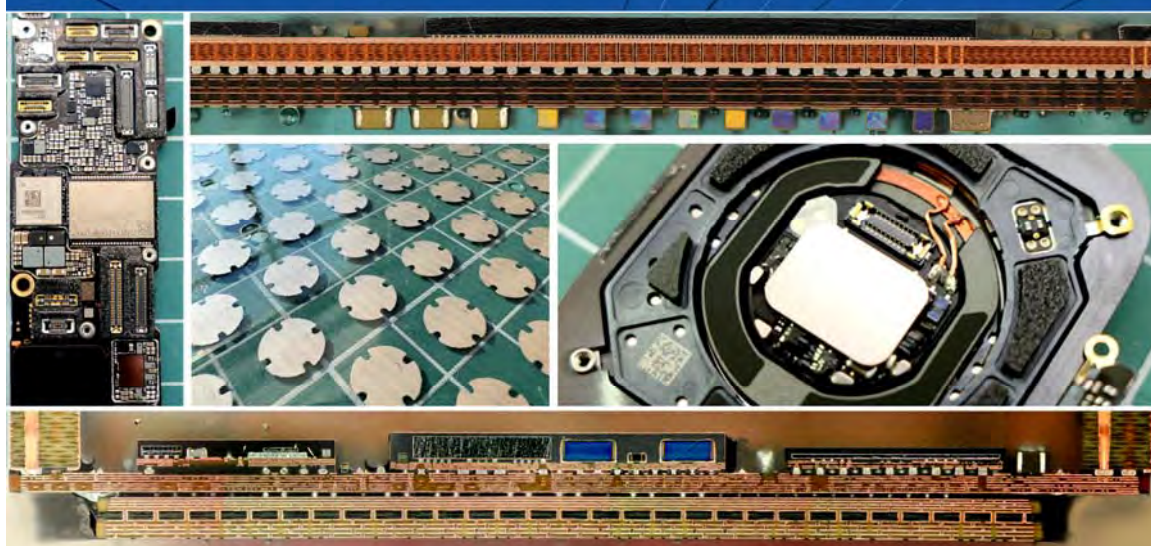
SECOND QUARTER • AUGUST 2023



- SUMMARY OF IMPORTANT DEVELOPMENTS IN Q2 2023
- The forty leading PCB suppliers, which account for over one-half of industry sales, reported an aggregate YoY revenue decline of 20.9% in 1H 2023 (-2.9% QoQ).
- The reasons for the PCB market's 1H downturn included:
 - Falling demand across all segments of the PCB market
 - The ongoing clearance of oversupplied inventory channels
 - ASP erosion across all product segments, with particularly severe price declines for HDI, FPC, and package substrates
 - Continued soft demand in PC, smartphone, and consumer electronics markets and slowing growth in the server and infrastructure markets
- Altogether, the global bare board PCB market is estimated to have declined to \$16.5Bn in Q2 2023 – representing a -1.7% change from Q1 2023 and -19.3% from Q2 2022.
- Based on current trends, Prismark forecasts the PCB market to decline by 15.0% in value terms in 2023. In terms of board area, we project a more modest decline of -4.8%.
- Along with collapsing revenues, the PCB industry experienced a significant decline in profitability in the first half of the year. Aggregate gross margins for the leading public PCB companies fell by more than 5% YoY, from 22.6% in 1H 2022 to 17% in 1H 2023. Aggregate net profits, meanwhile, fell by -65.5% YoY.
- The PCB industry has entered a period of capex retrenchment following the record-breaking investment spree of the past two years. The aggregate capex of the leading public PCB companies fell by -12.6% YoY compared to 1H 2022.
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing revised forecasts for 2023 and 2027 by PCB technology and region of production.
 - A detailed discussion of the flexible circuit market technology.

THE PRINTED CIRCUIT REPORT

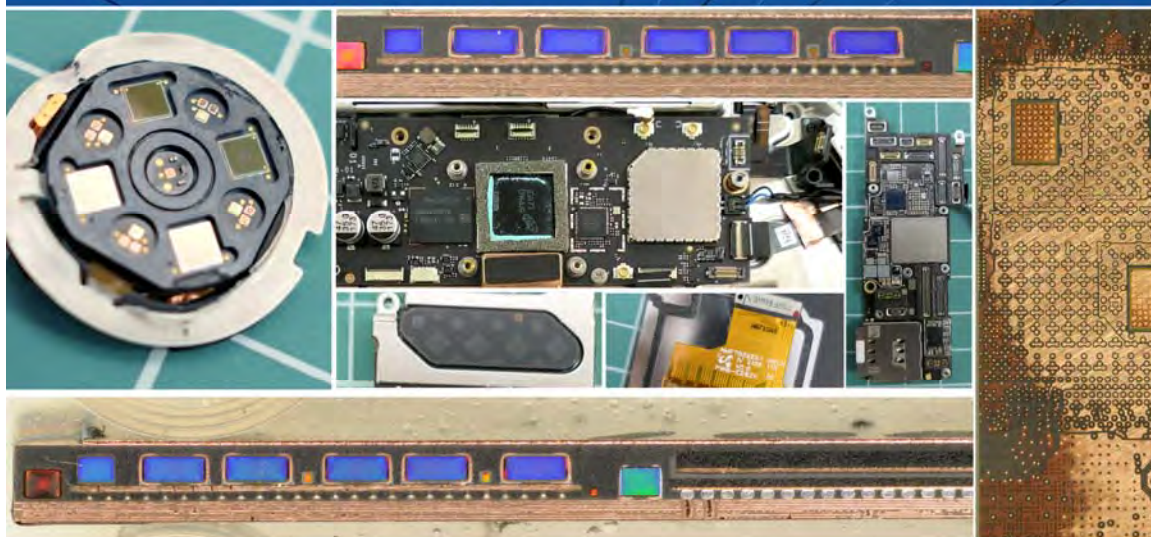
FIRST QUARTER • MAY 2023



- The forty leading PCB suppliers, which account for over one-half of industry sales, reported an aggregate YoY revenue decline of 20.4% in Q1 2023. Compared to Q4 2022, aggregate Q1 2023 revenues decreased 19.6%.
- The reasons for the PCB market's Q1 downturn included:
 - Falling demand across all segments for PCB market, including the advanced substrate market, which was the key growth driver for the overall market in 2021 and 2022
 - The ongoing clearance of oversupplied inventory channels
 - Continued soft demand in PC, smartphone and consumer electronics market and slowing growth in the server and infrastructure markets
 - Seasonality issues and lack of new product introductions pushed back the industry recovery
- Altogether, the global bare board PCB market is estimated to have declined to \$16.8Bn in Q1 2023 – representing a -13.1% change from Q4 2022 and -20.3% from Q1 2022. These numbers reflect a severe slowdown in the PCB market's growth trajectory relative to previous quarters.
- Following a weak performance in Q4 2022, the PCB market sustained its downward trend in Q1 2023, demonstrating weakness across all segments. Based on current trends, Prismark forecasts the PCB market to decline by 9.3% in value terms in 2023. In terms of board area, we project a more modest decline of 4.9%.
- Prismark has downgraded PCB area growth in 2022 and now estimates negative volume growth in every regional PCB market, except for the US (+0.8%). Owing to weak demand and low utilization rates, Prismark's global PCB production area estimate for 2022 has been revised down to 421.5M m², which represents a drop of 9.2% from 2021. Prismark has also downgraded its 2022 volume growth estimate for Japan (from -2.3% to -4.6%), China (from -9.8% to -10.2%), and Asia (from -5.7% to -6.4%).
- This report also includes the third edition of Prismark's top 100 PCB company rankings. Zhen Ding, Unimicron, and Dongshan Precision maintained their positions as the top 3 global PCB suppliers in 2022.
- The PCB industry set another record for capex and net profits in 2022. The top 40 PCB shops spent over \$9.3Bn, up 7.9% from 2022, to expand capacities and upgrade processing capabilities. In the meantime, the top 40 PCB shops earned \$6.7Bn in net profits in 2022, up 35% from 2021.
- This report provides:
 - An assessment of the geopolitical and economic trends and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing revised estimation of 2022 and forecasts for 2023 and 2027 by PCB technology and region of production.
 - A detailed discussion of developments in the multilayer board market and technology.

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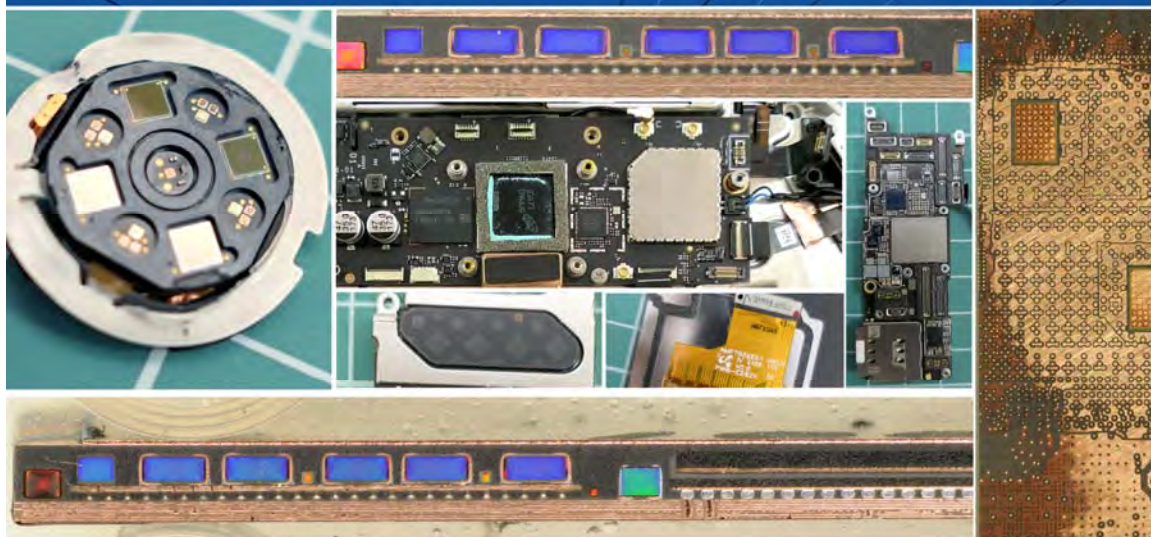
FOURTH QUARTER • FEBRUARY 2023



- The forty leading PCB suppliers, which account for over one-half of industry sales, reported an aggregate YoY revenue decline of 12.8% in Q4 2022. Compared to Q3 2022, aggregate Q4 2022 revenues decreased 7.4%. Revenues for the full year 2022 grew by 4% relative to 2021.
- The reasons for the PCB market's Q4 downturn included:
 - Slowing volume demand for package substrates and sudden ASP declines for both ABF and BT substrates
 - Continued deterioration in conventional rigid PCB value due to persistent weak demand for PCs, handsets, and consumer electronics
 - Weakening FPC demand mainly due to the contraction of the Chinese smartphone market and weaker-than-expected performance by Apple
 - Currency depreciation relative to the US dollar further impacted the performance of many suppliers based outside the US
- Altogether, the PCB market is estimated to have declined to \$19.3Bn in Q4 2022 – representing a -7.7% change from Q3 2022 and -14.6% from Q3 2021. These numbers reflect a severe slowdown in the PCB market's growth trajectory relative to previous quarters.
- Following a surprisingly strong performance in Q3, the PCB market began to show significant weakness in Q4, with every segment, including the previously resilient substrate market, yielding negative growth. Accordingly, Prismark has downgraded its aggregate estimate for the 2022 PCB market, with sales expected to grow by 1.0%, compared to the previous forecast of 2.9%.
- Prismark now estimates negative growth in every regional PCB market, except the US (+3.8%) and Asia – ex. China and Japan (+5.9%). The Chinese market—previously projected to grow by 0.1%—is now estimated to have declined by 1.4% due to steep cuts in rigid board production. Prismark has also downgraded its 2022 growth estimate for Japan (from +3.7% to -0.4%) and Europe (-1.8% to -5.9%). Prismark's estimate for the US PCB market improved (+2.6% to +3.8%) due primarily to increasing demand from military end-users.
- This report provides:
 - An assessment of the geopolitical and economic trends (inflation and monetary tightening, US export controls, Ukraine conflict) and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing forecasts for 2022 and 2027 by PCB technology and region of production.
 - A detailed discussion of developments in the Package Substrates market and technology.

THE PRINTED CIRCUIT REPORT

THIRD QUARTER • NOVEMBER 2022



- The forty leading PCB suppliers, which account for over one-half of industry sales, reported aggregate YoY revenue growth of 3.2% in Q3 2022. Compared to Q2 2022, aggregated Q3 2022 revenues increased 11.0%. Revenues for the first three quarters of 2022 increased by 11.3% over the same period in 2021.
- The key growth drivers for the PCB market in Q3 included:
 - Resilient demand for packaging substrates, reflected by strong performances by Unimicron, Nan Ya, Kinsus, AT&S, Simmtech, and Daeduck.
 - Apple's outstanding Q3 demand, which boosted sales for its key PCB suppliers, including Zhen Ding, Dongshan Precision, Compeq, FLEXium, and AKM Meadville.
 - Exceptional growth performances by a handful of FPC companies, including BH, Sumitomo Electric Industries, and Career Technology.
 - Acquisition-driven revenue growth (TTM, Summit, and Olympic)
- Altogether, the PCB market is estimated to have reached \$21.18Bn in Q3 2022 – up 3.6% from Q2 2022, but down 1.7% from Q3 2021. These numbers reflect a significant slowdown in the PCB market's growth trajectory relative to previous quarters.
- The PCB market outperformed expectations by a substantial margin in Q3, despite increasing signs of an impending global economic slowdown. Prismark has upgraded its aggregate forecast for the 2022 PCB market, with sales expected to grow by 2.9%, compared to the previous forecast of 1.5%.
- Prismark now projects positive growth in every regional PCB market, except Europe (-1.8%). The Chinese market—previously projected to decline by 1.2%—is now forecast to grow by 0.1% due to higher-than-anticipated HDI and FPC production. Prismark has also upgraded its 2022 growth forecast for the Americas (+2.6%) and Japan (+3.7%).
- In this report:
 - An assessment of the geopolitical backdrop (inflation and monetary tightening, US export controls, Ukraine conflict, China's COVID policy adjustments) and their impact on the global economy, electronics industry, and PCB market.
 - Comprehensive data and analysis of the PCB market, showing forecasts for 2022 and 2026 by PCB technology and region of production.
 - A detailed discussion of developments in the HDI market and technology.



*CONSULTANTS TO THE ELECTRONICS INDUSTRY
BUSINESS OPPORTUNITY FROM TECHNOLOGY AND
MARKET CHANGES*

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