

## Industry Starts the Year Off With Growth in Year-Over-Year Bookings and Billings

### Regional Performance:

YTD, all regions except North America and Japan grew, decreasing -0.8% and -12.3% respectively. All other regions grew, with China exhibiting double-digit growth. See page 5.

### Industry Backlog:

January backlog was \$20,970 million (14.1 weeks). This is up from 13.4 weeks in 2023, when backlog was \$21,017 million. See page 13.

### 2024 Outlook

Bishop anticipates sales to grow to \$85,319 million in 2024, an increase of +4.2% over 2023.

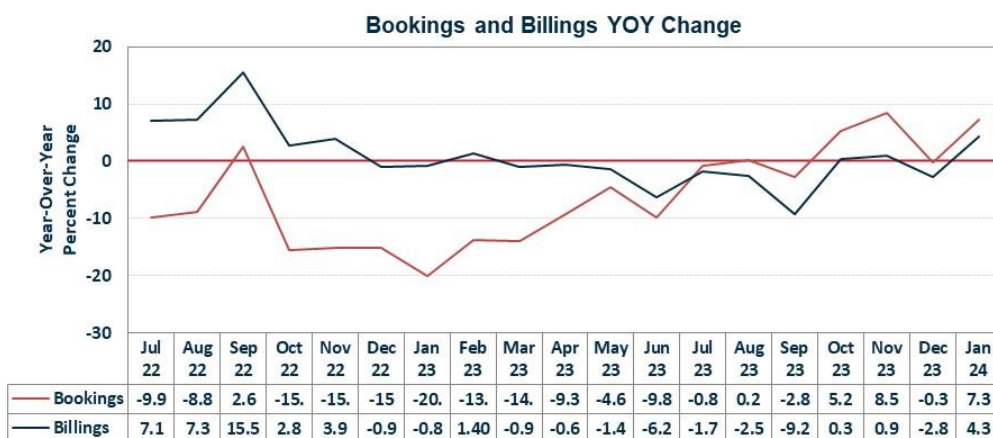
### 2024 Currency Impact:

The industry registered a YTD increase in sales in 2024, of +2.8% in local currency and +4.3% in USD.

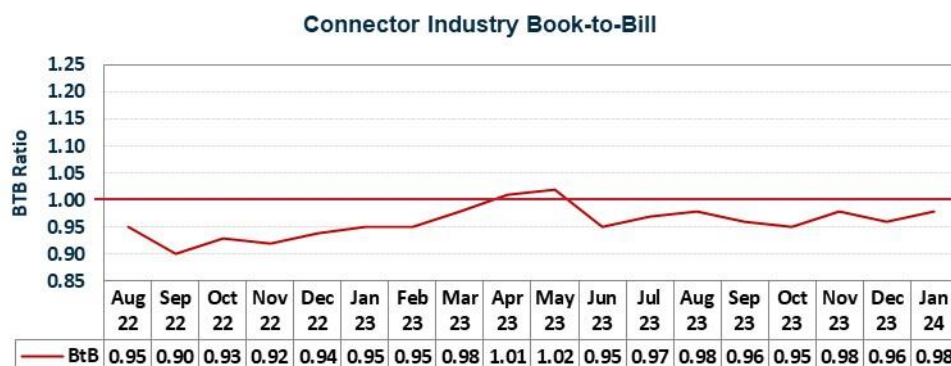
**NEW BISHOP  
RESEARCH REPORT**

**World Cable  
Assembly Market**

January bookings increased +7.3 and billings increased +4.3% year-over-year. The backlog in January increased to 14.1 weeks.



The book-to-bill ratio in January was 0.98, up from 0.96 in December.

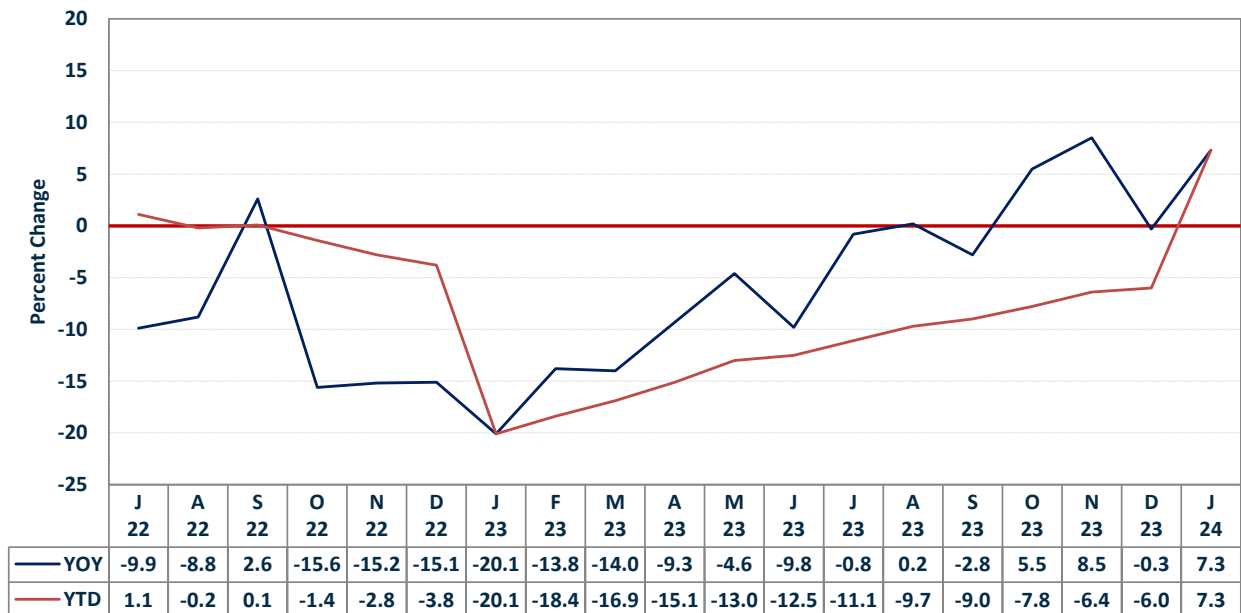


## Booking Highlights and Conclusions

### Sequential, Year-Over-Year, and Year-To-Date Bookings Percentage Change – 2022/2023/2024

Month	Sequential			Year-Over-Year			Year-To-Date		
	2022	2023	2024	2022	2023	2024	2022	2023	2024
Jan	2.6%	-3.2%	4.2%	15.9%	-20.1%	7.3%	15.9%	-20.1%	7.3%
Feb	10.4%	14.4%		8.7%	-13.8%		12.0%	-18.4%	
Mar	-5.3%	-1.8%		7.1%	-14.0%		10.3%	-16.9%	
Apr	-8.5%	-3.5%		-5.5%	-9.3%		6.2%	-15.1%	
May	7.0%	12.1%		-3.9%	-4.6%		4.5%	-13.0%	
Jun	-6.7%	-11.6%		-2.1%	-9.8%		3.0%	-12.5%	
Jul	-9.6%	-0.6%		-9.9%	-0.8%		1.1%	-11.1%	
Aug	8.0%	9.3%		-8.8%	0.2%		-0.2%	-9.7%	
Sep	-1.0%	-4.1%		2.6%	-2.8%		0.1%	-9.0%	
Oct	-12.1%	-4.5%		-15.6%	5.5%		-1.4%	-7.8%	
Nov	9.8%	13.2%		-15.2%	8.5%		-2.8%	-6.4%	
Dec	-6.8%	-14.8%		-15.1%	-0.3%		-3.8%	-6.0%	

### Bookings - YOY and YTD

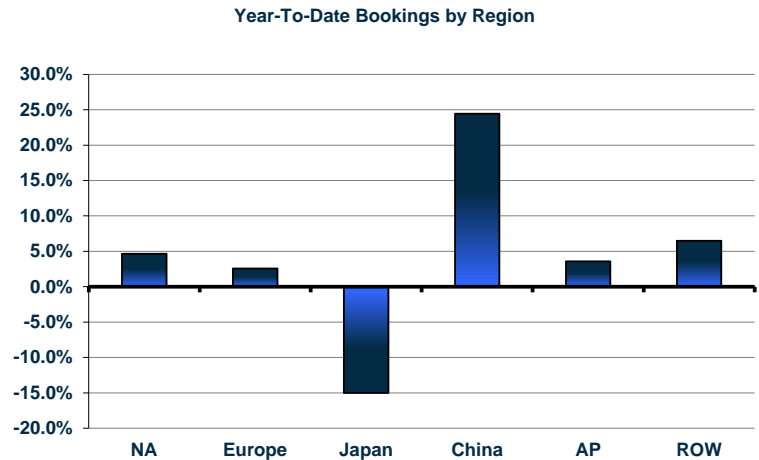


- January bookings increased +7.3% year-over-year.
- Orders increased +4.2% on a sequential basis.
- The book-to-bill ratio for January was 0.98, up from 0.96 in December.

## Regional Performance: BOOKINGS

### January 2024 Bookings

Region	Sequential	YOY	YTD
NA	7.8%	4.6%	4.6%
Europe	11.4%	2.6%	2.6%
Japan	-20.3%	-15.0%	-15.0%
China	3.2%	24.4%	24.4%
AP	-3.7%	3.6%	3.6%
ROW	-4.0%	6.5%	6.5%
Total	4.2%	7.3%	7.3%



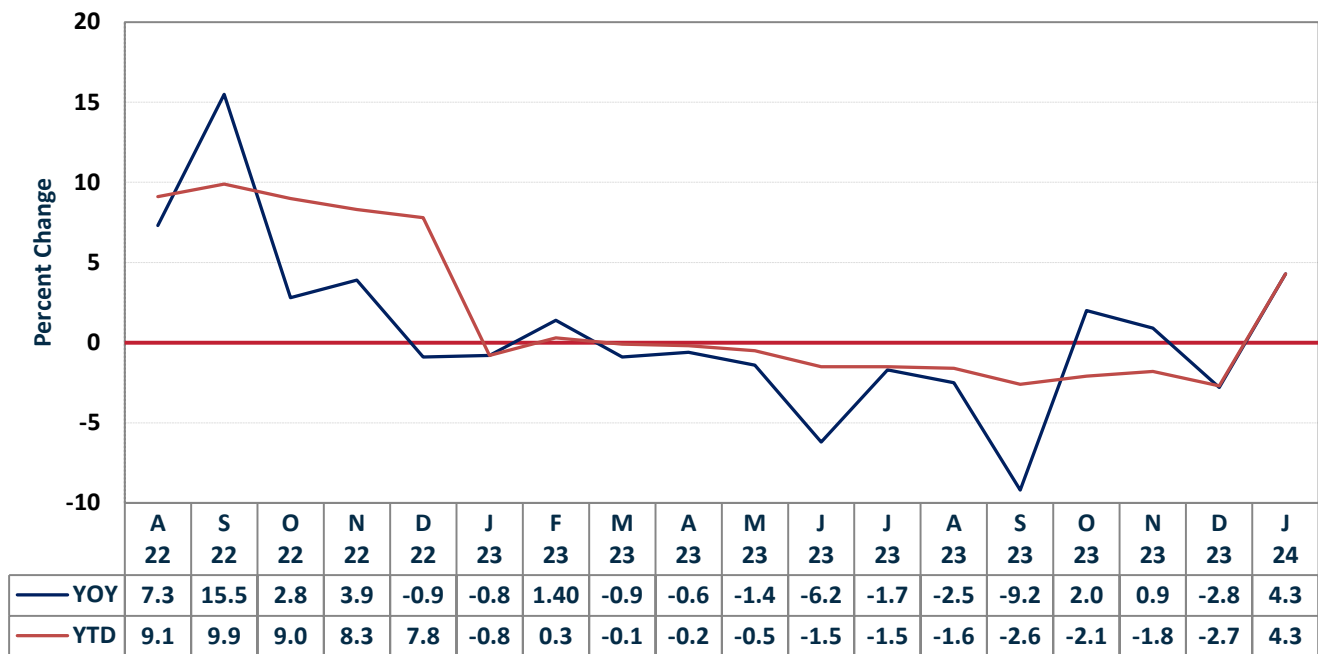
- January bookings increased by +7.3% compared to the previous year.
- Year-over-year orders rose in all of the regions but Japan, where orders decreased -15.0%. The greatest increase was in China, where order increased +24.4%, followed by Rest of the World (ROW) where orders increased +6.5% YOY.
- YTD, all regions increased but Japan, where orderd declined -15.0%.

## Billing Highlights and Conclusions

### Sequential, Year-Over-Year, and Year-To-Date Billings Percentage Change – 2022/2023/2024

Month	Sequential			Year-Over-Year			Year-To-Date		
	2022	2023	2024	2022	2023	2024	2022	2023	2024
Jan	-4.3%	-4.4%	2.6%	12.4%	-0.8%	4.3%	12.4%	-0.8%	4.3%
Feb	11.4%	13.9%		11.2%	1.4%		11.8%	0.3%	
Mar	-2.0%	-4.4%		10.2%	-0.9%		11.2%	-0.1%	
Apr	-6.6%	-6.3%		4.1%	-0.6%		9.4%	-0.2%	
May	10.7%	10.7%		7.7%	-1.4%		9.1%	-0.5%	
Jun	0.7%	-4.7%		12.7%	-6.2%		9.8%	-1.5%	
Jul	-7.1%	-2.5%		7.1%	-1.7%		9.4%	-1.5%	
Aug	8.9%	8.0%		7.3%	-2.5%		9.1%	-1.6%	
Sep	5.1%	-2.1%		15.5%	-9.2%		9.9%	-2.6%	
Oct	-14.0%	-3.3%		2.8%	2.0%		9.1%	-2.2%	
Nov	10.6%	9.3%		3.9%	0.9%		8.6%	-1.9%	
Dec	-10.0%	-13.2%		-0.9%	-2.8%		7.8%	-2.7%	

### Billings - YOY and YTD

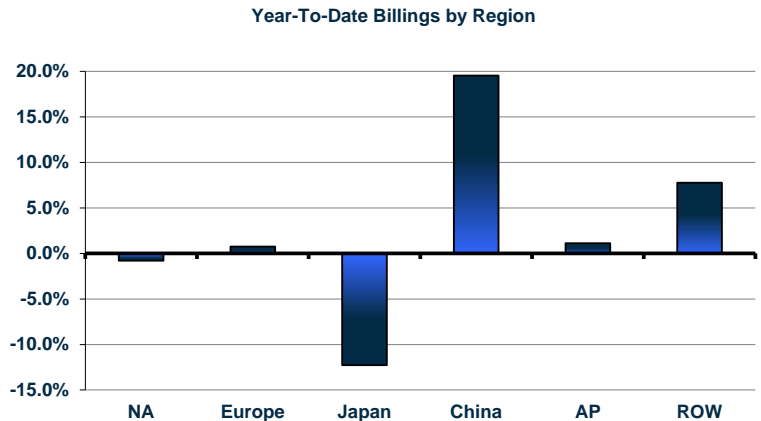


- January billings grew +4.3% year-over-year and year-to-date.
- Sequentially, January billings increased +2.6%.

## Regional Performance: BILLINGS

### January 2024 Billings

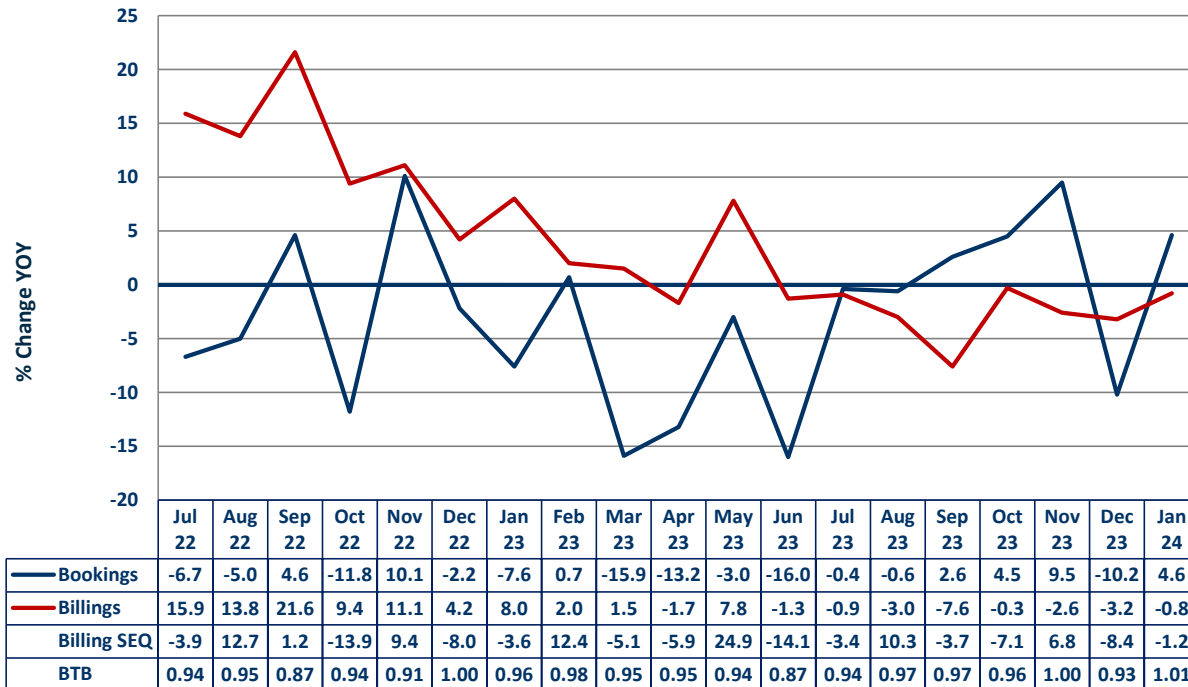
Region	Sequential	YOY	YTD
NA	-1.2%	-0.8%	-0.8%
Europe	15.1%	0.8%	0.8%
Japan	-9.3%	-12.3%	-12.3%
China	0.7%	19.5%	19.5%
AP	-3.3%	1.1%	1.1%
ROW	-3.0%	7.8%	7.8%
Total	2.6%	4.3%	4.3%



- January connector sales increased by +4.3% compared to the same period last year.
- In January, four out of six regions saw a sequential decline from December 2023, with Japan experiencing the largest decrease, declining -9.3%, followed by Asia Pacific where sequentially sales declined -3.3%.
- Year-over-year, all regions except North America and Japan saw an increase, with China growing the most, increasing +19.5% and Japan decreasing the most at -12.3%.

**North America:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill (BTB) ratio is also displayed.

**North America Bookings and Billings  
Year-Over-Year Percentage Change  
& Book-To-Bill Ratio**

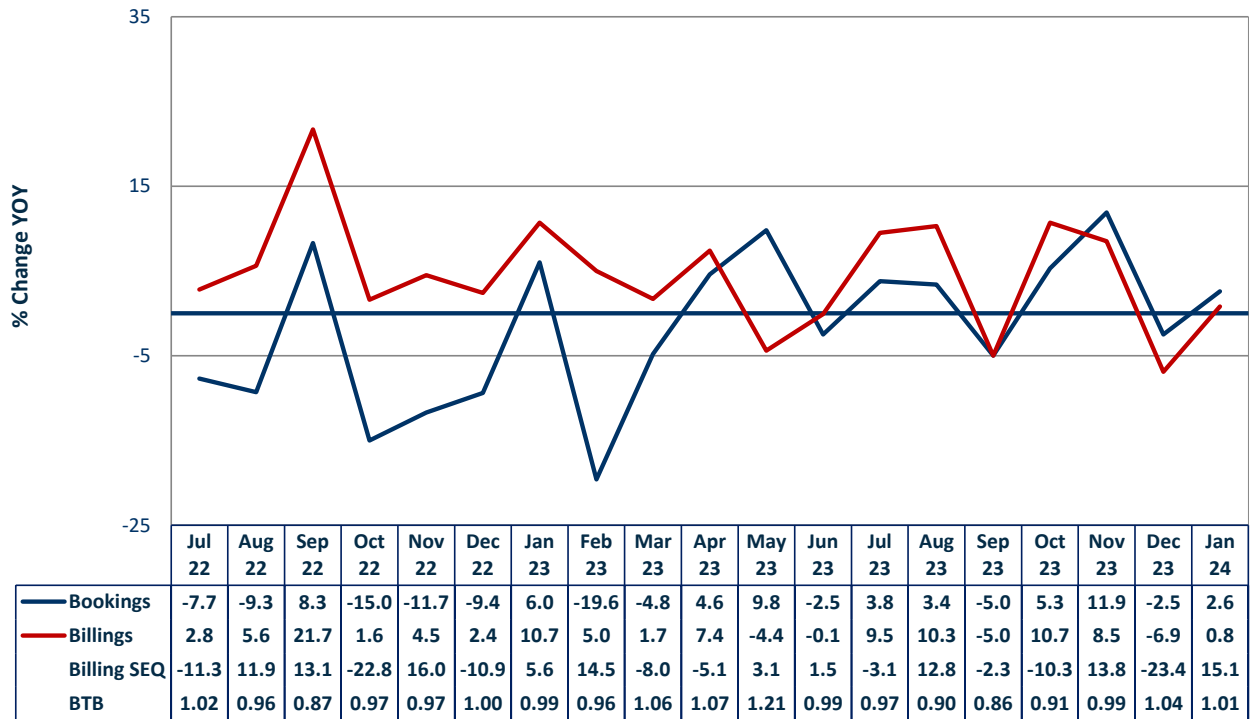


## North America Performance

- In January, North America had a year-over-year sales decline of -0.8%, while orders grew +4.6%. Sequentially, North American billings decreased -1.2%. The book-to-bill ratio was 1.01, the highest book-to-bill value since June 2022.
- The US GDP expanded by an annualized 3.3% in Q4 2023. It is estimated that for 1Q2024, GDP should fall in the range of 1.5% to 2.0%.
- In January 2024, the United States' inflation rate was 3.1% compared to 6.4% in January 2023.
- Industrial production moved down 0.1% in January and manufacturing output on a year-on-year basis fell by 0.5% in January.
- Manufacturing PMI registered an unexpected jump to 50.3% in January from 47.9% in December 2023.
- US unemployment remained steady at 3.7% in January, but slightly higher than last year's rate in January of 3.4%.
- Retail sales fell 0.8% in January, breaking a two-month streak of increases.
- According to MarkLines, January US new vehicle sales decreased 25.6% from December 2023, and increased 2.2% from January 2023.
- The Consumer Price Index for All Urban Consumers (CPI-U) increased 0.3% in January on a seasonally adjusted basis, after rising 0.2% in December.

**Europe:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.

**Europe Bookings and Billings**  
Year-Over-Year Percentage Change  
& Book-To-Bill Ratio



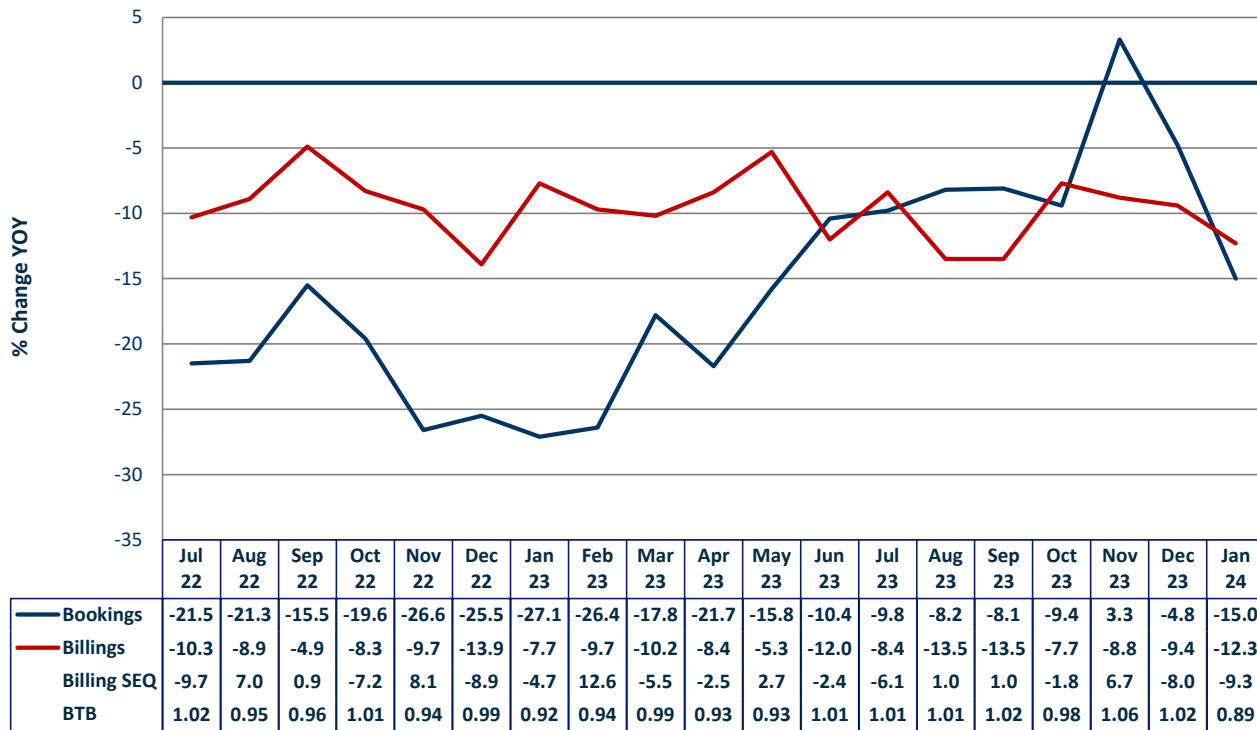
## Europe Performance

- In January, year-over-year bookings and billings increased, +2.6% and +0.8% respectively. Sequentially, sales grew +15.1%. The book-to-bill ratio was 1.01.
- According to Eurostat, Euro zone economic growth was flat in 4Q2023 when compared to 3Q2023, and up 0.1% against the same period in 2022.
- Euro area industrial production increased 1.2% YOY in December\*, while Eurozone Manufacturing PMI rose to 46.6 in January.
- The euro area annual inflation rate is expected to be 2.8% in January 2024, down from December's reading of 2.9%.
- December euro retail sales growth rate dropped -1.1% month-over-month.
- In December\* 2023, the euro area seasonally adjusted unemployment rate was 6.4%, stable compared with November 2023 and down from 6.7% in December 2022.
- The consumer confidence indicator in the euro area dropped by 1 point from the previous month to -16.1 in January 2024.

*\*January readings not published at the time of this reporting.*

**Japan:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.

Japan Bookings and Billings  
Year-Over-Year Percentage Change  
& Book-To-Bill Ratio

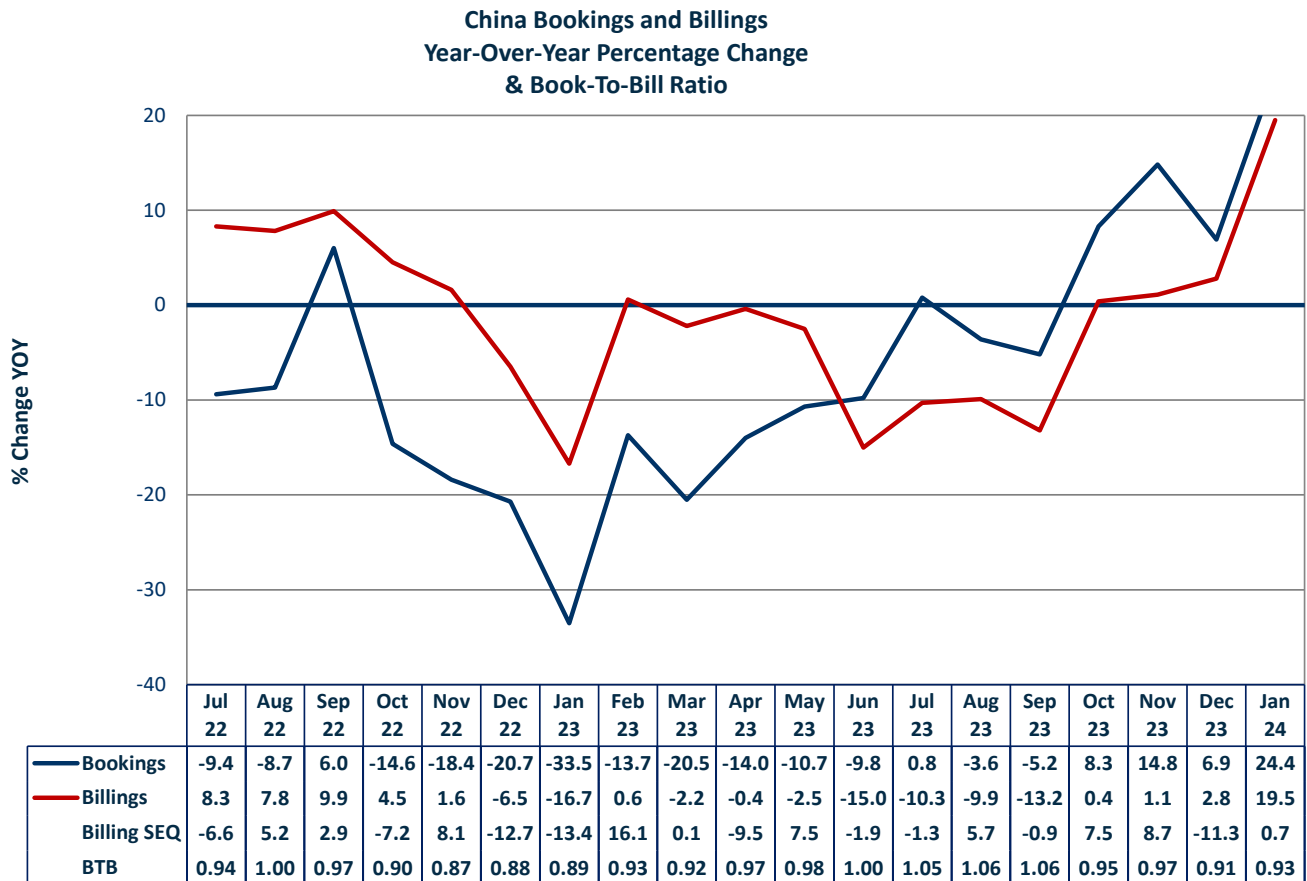


## Japan Performance

- January, year-over-year bookings declined -15.0%, while sales dropped -12.3%. Sequentially sales declined -9.3%. Japan's book-to-bill ratio was 0.89.
- Japan's GDP shrank 0.1% quarter-over-quarter in 4Q2023, driving the economy into a recession for the first time in five years.
- The inflation rate in February recorded a 2.4% reading, down from 2.6% in January 2024.
- Industrial production growth in Japan was revised lower to 1.4% month-over-month in December 2023 from flash data of a 1.8% growth, after a 0.9% drop in the prior month. This is the strongest pace of expansion since June.
- Retail sales in Japan decreased 2.9% in December\* of 2023 over the previous month. Unemployment is expected to be 2.6% by the end of 1Q2024.
- Japan's exports rose 11.9% in January from the same month a year ago, led by robust demand for vehicles, auto parts, and machinery. This helped shrink the trade deficit to \$12 billion, or about half of what it was a year ago. Imports declined 9.6% from the previous year. Japan's manufacturing PMI for January was 48.0.

*\*January readings not published at the time of this reporting.*

**China:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.

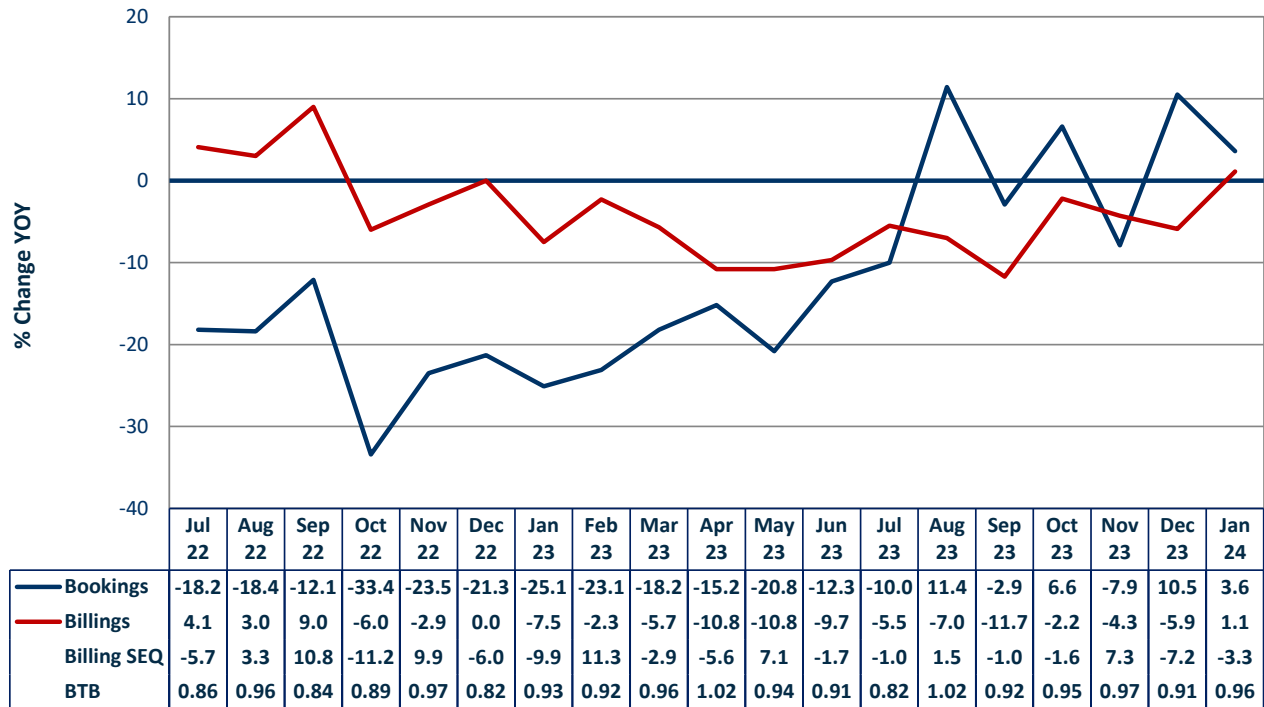


## China Performance

- China's January sales grew +19.5% on a year-over-year basis, while orders grew +24.4%. Sequentially, sales increased 0.7%. The BTB was 0.93, an improvement over December's BTB reading of 0.91.
- China's fourth quarter GDP reading was 5.2% and is expected to be 4.6% in 2024.
- China's Purchasing Managers' Index (PMI) nudged up to 49.2 in January from December's 49.0.
- China's January inflation rate was -0.80%, up from -0.30% in December.
- According to National Bureau of Statistics of China, retail sales increased 7.4% YOY in January.
- January 2024 trade statistics show China's export value grew for the 2<sup>nd</sup> consecutive month by 11.9% year-over-year. Much of this can be attributed to China's NEV (new electric vehicle) exports being up 27.1% in January 2024
- China's vehicle production and sales volumes totaled 2.41 million units and 2.439 million units, up 51.2% and 47.9% year-over-year, respectively.
- China's surveyed urban unemployment rate was at 5.2% in 2023. The unemployment rate in China is forecast to be 5.19% in 2024.

**Asia Pacific:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.

**Asia Pacific Bookings and Billings  
Year-Over-Year Percentage Change  
& Book-To-Bill Ratio**



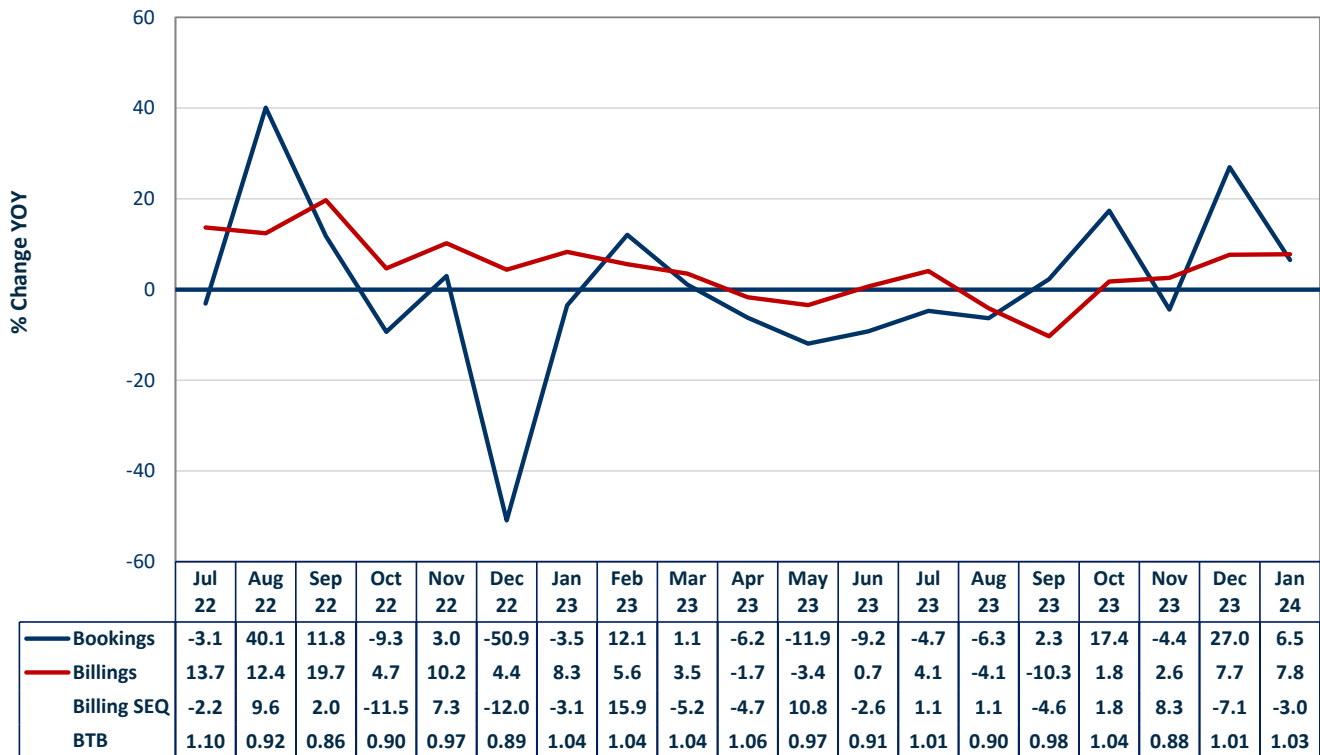
## Asia Pacific Performance

- Year-over-year, January orders grew +3.6% while sales increased +1.1%. Sequentially, sales fell -3.3%. The book-to-bill ratio trended upward to 0.96.
- India's first quarter GDP is forecast to reach 7.8%, outpacing many major economies.
- India's industrial production increased to 3.8% in December\*, up from 2.4% in November. India's overall exports (merchandise and services combined) grew 9.28% in January to \$69.72 billion, electronic goods registered an increase of 9.31%. The manufacturing PMI increased slightly to 56.5 in January, up from 54.9 in December. Annual retail price inflation in India eased to 5.1% in January 2024, down from 5.69% in December.
- According to Nikkei Asia, "South Korea's economy maintained its growth clip in the final quarter of last year, though exports slowed. The Bank of Korea, the country's central bank, announced quarterly growth of 0.6% for the fourth quarter, bringing the figure for all of 2023 to 1.4%."
- Manufacturing production in South Korea increased 6.2% YOY in December\*. Industrial Production in South Korea is expected to be 3.2% by the end of first quarter 2024. South Korean semiconductor export sees 53% growth in January 2024. The export volume of South Korea's ICT industry has seen double-digit growth for the first time in nearly two years.

*\*January readings not published at the time of this reporting*

**Rest of World:** The following chart displays the year-over-year percentage change in bookings and billings for the last 18 months. The monthly book-to-bill ratio is also displayed.

ROW Bookings and Billings  
Year-Over-Year Percentage Change  
& Book-To-Bill Ratio



## Rest of World Performance

- Orders grew +6.5% while billings increased +7.8% YOY in January. Sequentially, sales in the region fell -3.0%. The book-to-bill ratio was 1.03.
- According to Reuters, "Growth in Latin America's No.1 economy [Brazil] is set to decelerate to 1.6% in 2024 vs. 3.0% in 2023, according to the median forecast of 50 economists polled mid-January".
- Industrial production in Brazil increased 1.1% in December\*. The annual inflation rate in Brazil eased slightly to 4.51% in January of 2024 from 4.62% in the previous month, overshooting market expectations of 4.42%.
- Brazil manufacturing PMI rose to 52.8 in January from a reading of 48.4 in December. The unemployment rate in 2023 was 7.8%, a drop of 1.8% percentage points from 2022. It is anticipated to be 8.17% in 2024. Exports in Brazil were \$27.0 billion in January, compared with \$28.8 USD billion in December.

*\*January readings not published at the time of this reporting.*

## Regional Summary Snapshot

The following table shows a snapshot of the performance of each region. The table displays the latest metric available, and the trend of the metric compared to prior months/quarters.

	North America	Europe	Japan	China	Asia Pacific	ROW
<b>GDP Growth YOY</b>	2.0% Slowing	0.1% Flat/Slowing	0.1% Shrinking	5.2% Growing	N/A	N/A
<b>Industrial Production Growth</b>	0.1% Down	1.2% Up	1.4% Down	6.8% Up	N/A	N/A
<b>Manufacturing PMI*</b>	50.3 Up	46.6 Up	48.0 Up	49.2 Up	N/A	N/A
<b>Inflation Rate</b>	3.1% Steady	2.8% Slowing	2.4% Slowing	-0.8% Up	N/A	N/A
<b>Unemployment Rate</b>	3.7% Steady	6.4% Steady	2.6% Steady	5.2% Up	N/A	N/A
<b>Retail Sale Growth YOY</b>	-0.8% Slowing	-1.1% Down	-2.9% Down	7.4% Steady	N/A	N/A
<b>January Connector Sales</b>	-0.8%	0.8%	-12.3%	19.5%	1.1%	7.8%
<b>YTD Connector Sales</b>	-0.8%	0.8%	-12.3%	19.5%	1.1%	7.8%
<b>January Connector Orders</b>	4.6%	2.6%	-15.0%	24.4%	3.6%	6.5%
<b>YTD Connector Orders</b>	4.6%	2.6%	-15.0%	24.4%	3.6%	6.5%

\* Purchasing Manager Index - Below 50 is contracting factory activity

## Industry Backlog Is 14.1 Weeks

The industry shipped \$1,487 million per week in January. The ending January backlog is \$20,970 million which represents 14.1 weeks, assuming weekly sales remain constant.

The following table shows the world connector backlog of order ending January 2024.

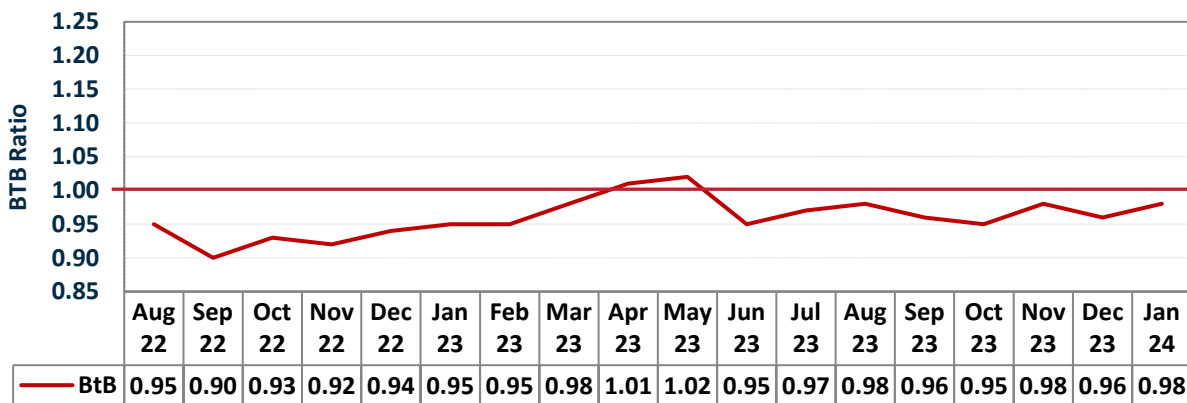
### Industry Backlog

	2023	January 2024
BtB Ratio	0.98	0.98
Beginning Backlog	\$22,983	\$21,107
Bookings	\$79,888	\$6,703
Billings	\$81,854	\$6,840
Ending Backlog	\$21,017	\$20,970
Backlog in Weeks	13.4	14.1

\$ Millions

The book-to-bill ratio in January was 0.98. The following displays the trend of BTB ratios since August of 2022.

### Connector Industry Book-to-Bill



The book-to-bill ratio was 1.0 or above only three times in the past 20 months, all of those in 2023. Since May 2022 the backlog has declined by \$5.4 billion which clearly reflects the very soft demand for electronic components, including connectors. The following table tracks industry backlog since May 2022, which was the highest backlog in industry history.

## **Ending Backlog Since May 2022**

<b>Month</b>	<b>Ending Backlog</b>	<b>BTB Ratio</b>
May 2022	\$26,373	1.07
June 2022	\$26,302	0.99
July 2022	\$26,036	0.96
August 2022	\$25,673	0.95
September 2022	\$24,846	0.90
October 2022	\$24,396	0.93
November 2022	\$21,828	0.92
December 2022	\$22,983	0.94
January 2023	\$22,725	0.95
February 2023	\$21,422	0.95
March 2023	\$22,233	0.98
April 2023	\$22,170	1.01
May 2023	\$22,033	1.02
June 2023	\$22,102	0.95
July 2023	\$21,974	0.97
August 2023	\$21,770	0.98
September 2023	\$21,465	0.96
October 2023	\$21,224	0.96
November 2023	\$21,203	1.00
December 2023	\$21,017	0.96
January 2024	\$20,970	0.98

**\$ Millions**

We are forecasting a small increase in order backlog in 2024. We expect a modest uptick in sales.

## **Currency Fluctuations Reduce Performance between USD and Local Currency**

The dollar has been fluctuating against the euro, the yen, and the yuan. The following table measures the impact for January 2023 versus January 2024 and shows results for these three currencies.

### **Local Currency to One USD 2023 YTD versus 2024 YTD**

<b>Currency</b>	<b>2023</b>	<b>2024</b>	<b>% Change</b>
Euro	0.9276	0.9160	1.3%
Yuan	6.7967	7.1327	-4.7%
Yen	130.2022	145.9737	-10.8%

Europe, China, and Japan account for approximately 60% of world connector sales. Currency fluctuation against the US dollar can have a significant impact on our reporting of sales performance in US dollars.

The following table shows December YOY performance by region in US dollars and local currencies.

### **Industry Sales Performance January 2024 USD-vs-Local Currencies**

<b>Region</b>	<b>U.S.\$</b>	<b>Local Currency</b>
North America	-0.8%	-0.8%
Europe	0.8%	2.0%
Japan	-12.3%	-21.8%
China	19.5%	13.9%
Asia Pacific	1.1%	1.1%
ROW	7.8%	7.8%
<b>World</b>	<b>4.3%</b>	<b>2.8%</b>

Connector sales in 2024 grew 2.8% when measured in local currencies, (versus 4.3% in US dollars).

## 2024 Outlook: A Historical Perspective

One of Bishop's methods of forecasting is to analyze past results to predict the future. This section uses past connector sales results to estimate the range of possible outcomes for 2024.

Our connector database identified, since 2010, January actual sales represented on average 7.5% of full year sales and 7.1% on the low end and 8.0% on the high end. Using the historical averages, we were able to predict a range of possible outcomes for 2022 (Bishop Report Issue #351) and for 2023 (Bishop Report Issue #364).

In 2022, using the average +7.5%, the calculation forecast that the industry would grow +9.6%. The full year 2022 resulted in sales growing +7.8%. In 2023, the average forecast full year sales would increase 2.4% when the full year actual sales were down -2.7%.

We believe this system has some merit and is worthy of consideration for 2024, which the following table provides.

### 2024 Historical Analysis

	High	Average	Low
Jan. Historical	7.1%	7.5%	8.0%
Jan. Actual Sales	\$6,840	\$6,840	\$6,840
2024 Forecast	\$96,338	\$91,200	\$85,500
2023 Sales	\$81,854	\$81,854	\$81,854
Percent Growth	17.7%	11.4%	4.5%

\$ Millions

Based on sales in January 2024, this historical analysis projects a growth year with the average showing sales up +11.4% on the high end and +4.5% on the low end.

We are less optimistic for 2024, forecasting full-year growth of +4.2%. Our forecast, by region, is shown in the following table.

## **2024 Bishop Forecast 2023 and 2024F Connector Sales by Geographic Region With Percent Change**

<b>Region</b>	<b>2023 Actual</b>	<b>2024 Forecast</b>	<b>Percent Change</b>
North America	\$18,840.8	\$19,809.9	5.1%
Europe	\$17,992.7	\$18,583.6	3.3%
Japan	\$4,683.7	\$4,852.2	3.6%
China	\$24,977.1	\$26,066.2	4.4%
Asia Pacific	\$11,310.0	\$11,843.2	4.7%
ROW	\$4,049.8	\$4,164.1	2.8%
<b>Total World</b>	<b>\$81,854.1</b>	<b>\$85,319.2</b>	<b>4.2%</b>

**\$ Millions**

As sales results are recorded throughout the year, we will recalculate the historical number and report actual sales versus forecast sales.

## **Significant Events**

### **Jan 2024 News**

#### **North American EMS Industry Up 1.3 Percent in December**

IPC announced the December 2023 findings from its North American Electronics Manufacturing Services (EMS) Statistical Program. The book-to-bill ratio stands at 1.20. Total North American EMS shipments in December 2023 were up 1.3 percent compared to the same month last year. Compared to the preceding month, December shipments increased 6.2 percent. EMS bookings in December decreased 7.0 percent year-over-year and increased 2.3 percent from the previous month.

“The EMS Book-to-Bill held steady to close out 2023,” said Shawn DuBravac, IPC’s chief economist. “Despite a down year for orders, shipments remained positive as manufacturers trimmed backlogs.”

#### **North American PCB Industry Shipments Down 18.3 Percent in December**

IPC announced today the December 2023 findings from its North American Printed Circuit Board (PCB) Statistical Program. The book-to-bill ratio stands at 0.90. Total North American PCB shipments in December 2023 were down 18.3 percent compared to the same month last year. Compared to the preceding month, December shipments were up 1.0 percent. PCB bookings in December were down 28.7 percent compared to the same month last year. December bookings were down 14.1 percent compared to the preceding month.

“PCB orders fell in the final month of 2023, dropping the Book-to-Bill to the lowest level since May 2023. Orders were down 10 percent in 2023,” said Shawn DuBravac, IPC’s chief economist.

#### **ECIA: Component Sales Set for Growth**

The electronics supply chain is optimistic that component sales will grow in early 2024 – tempered with the usual caution. The ECIA’s Electronic Component Sales Trend (ECST) survey jumped 20 points in January to 98 points, just shy of the 100-point threshold that indicates growth. It’s the ECST’s highest level in 21 months.

There are no overt reasons for this surge in optimism as component inventory levels in the supply chain remain high and global demand for electronics soft. In fact, inventory burn in the channel is taking longer than expected, a channel executive told Edgewater Research. “Overall, distributor inventories continue to be noted as stubbornly high and though the supply chain continues to hold onto the 2H24 recovery expectations, concerns regarding the duration of the digestion and the shape of the recovery in distribution remain, translation into a muted 2024 outlook of flat to low single digit growth in POS,” Edgewater said in its January Component Insights report.

Still, “the supply chain continues to be in a relatively healthy state despite ongoing elevated inventory levels,” said ECIA Chief Analyst Dale Ford in a statement.

Semiconductor results from the ECST jumped nearly 39 points to 105 points in January, said the ECIA. Electromechanical and passive components both achieved double-digit index score improvements. “Growth in the overall index fell short of the 27.8-point improvement predicted in the December survey, but even delivering half of that projection would indicate a strong start to the new year,” said Dale Ford, ECIA’s chief analyst, in a statement.

ECST respondents expect the overall component sales index to improve by an additional 9.4 points to break above 100 and reach 107.4 in February. Semiconductors are forecast to improve their score to 117 and

electromechanical components are expected to join them above the 100 threshold at 105. Even though passive components are projected to deliver the strongest improvement in the index for February with an improvement of 11.8, this increase will still leave it just short of positive growth territory at 98.8.

## **Rebound vs. recovery**

If the February projections hold true, it will result in the index improving by 29.6 points in a 2-month period — the index has only surpassed this performance twice in its history, according to Ford.

The last time the index grew at this rate was in September 2020, he explained. However, this prior leap in the index followed the crash in the overall index score of 59 points between February and May 2020. This earlier index performance could be described as a “rebound” from the Covid impact while the current period is behaving more as a “recovery” from an extended slump of 1.5 years.

The end-market index also reported solid improvement in January even though it is slightly weaker than the growth in the component index. The January market index increased to an overall score of 93. The avionics/military/space, medical, and industrial markets all scored above 100 points. Every market, except telecom/mobile phones, are expected to achieve scores above 100 in February. The overall end-market index is forecast to reach 103.1.

Separately, Adriot Market Research predicts the electronics components market will grow at a CAGR of 7.8 percent from 2023 to 2032. The worldwide market for electronic components was projected to be \$192.22 billion in 2022 and will reach \$369.1 billion by 2032.

The supply chain continues to be in a relatively healthy state despite ongoing elevated inventory levels, said Ford. Product lead times continue to maintain a solid performance dominated by reports of stable lead times averaging 66 percent share of respondents for January 2024. The number reporting increased lead times grew in all three component categories. Still, the highest number of reports came in passive components at only 7 percent. The overall percentage of survey participants reporting increasing lead times grew slightly from 3 percent to 5 percent. At the same time the average percentage reporting declining lead times remained stable at 28 percent.

## **Apple's iPhone China Shipments Down 2.1% in the Final Quarter of 2023**

Apple's smartphone shipments in China shrank 2.1 percent in the final quarter of last year from the same period in the previous year, hurt by intensifying competition from local rivals led by Huawei Technologies Co, data from research firm IDC showed.

The drop underscores the challenges facing the US firm in its third-biggest market, as some Chinese companies and government agencies limit employees' use of Apple devices, a measure that mirrors US government restrictions on Chinese apps on security grounds.

Huawei, whose smartphone business was stymied by US sanctions, also made a comeback last year with new launches, intensifying competition in the world's biggest smartphone market, which grew just 1.2 percent in the final quarter of last year. Huawei's shipments increased 36.2 percent last quarter figures showed. The company became the fourth largest smartphone vendor in China in the period with a 13.9 percent market share, up from 10.3 percent in the same year-ago quarter.

However, for the full year last year, Apple overtook Vivo to become the top smartphone seller with a 17.3 percent market share, the IDC data showed. This marked the first time Apple became the top seller in China, but analysts predicted its sales would come under pressure again this year. IDC said Apple's high-end market

share in China has been impacted by rival products and limited product upgrades by Apple, which reduced the overall attractiveness of iPhones. It said Apple still attracted demand from many consumers through substantial discounts and promotions carried out through third-party distribution channels. Earlier this month, Apple offered rare discounts on its iPhones, cutting retail prices by as much as 500 yuan (US\$70) amid growing competitive pressure.

Jefferies analysts earlier this month predicted that Apple's shipment volumes would continue declining by double-digit percentages this year, while Huawei is seen bolstering its market share. They estimate Huawei would ship about 64 million smartphones worldwide this year, a significant rise from fewer than 35 million units projected for last year.

Overall, shipment volume in China's smartphone market was 73.63 million units in the fourth quarter. For the full year, shipment volume was 271 million units, down 5 percent, IDC said.

### **Intel Has Worst Day since 2020 on Weak Outlook**

Intel shares slumped 12% for their steepest drop since July 2020, after the chipmaker issued a forecast for the current quarter that came in far short of analysts' estimates.

In its earnings report late Thursday, Intel beat on profit and revenue, but the chipmaker said it expected adjusted earnings of 13 cents per share this quarter on between \$12.2 billion and \$13.2 billion in sales. Analysts were expecting earnings of 33 cents per share on \$14.15 billion of revenue, according to LSEG, formerly Refinitiv. Intel's revenue guidance for the first quarter was below every analyst's estimate, according to CNBC research.

While some parts of the semiconductor industry are booming because of strong demand for artificial intelligence chips, other server parts, such as the central processing units, or CPUs, that Intel makes, don't have the same kind of momentum.

Intel CEO Patrick Gelsinger told analysts on the earnings call that first-quarter sales performance would take a hit because of weakness at Mobileye, where Intel owns a majority stake, as well as in the company's programmable chip unit.

### **Tesla Recalls Nearly 200,000 Vehicles in the U.S. Over Rearview Camera Bug**

Electric vehicle maker Tesla is recalling nearly 200,000 cars in the U.S. due to a "software instability" that prevented the rearview camera image from displaying, according to the National Highway Traffic Safety Administration (NHTSA).

The U.S. agency said in a recall update on its website that Tesla was recalling certain 2023 Model S, X, and Y vehicles equipped with full self-driving 4.0, the company's driverless software system, due to the software bug.

Tesla shares were slightly higher in premarket trading Friday.

The potential number of cars affected by the recall is 199,575, the NHTSA said. Tesla's reference number for the recall is SB-24-00-002 and customers with questions are advised to speak to the company's customer services.

The company has already released an over-the-air software update free of charge to owners to remedy the issue, the NHTSA said, and owners are expected to be notified of the recall by mail starting March 22.

Tesla's latest recall follows a record one last month, when the automaker recalled 2 million Tesla vehicles over a defective system that was designed to ensure drivers were paying attention when using its Autopilot feature. It came after a series of deadly crashes involving Tesla's Autopilot software that were investigated by the NHTSA.

The move also follows a grim financial outlook from Tesla. The automaker said that its vehicle volume growth in 2024 "may be notably lower" than the rate observed last year, as it works toward launching its "next-generation vehicle" in Texas.

## **Apple iPhone Shipments May See 'Significant Decline' in 2024**

Shipments of iPhones are likely to take a hit this year due largely to the growing popularity of foldable phones and Huawei's resurgence in the Chinese market, says top Apple analyst Ming-Chi Kuo of TF International Securities.

Apple, which became the top smartphone vendor in China last year for the first time, trimmed shipments of "key upstream semiconductor components" to around 200 million units, translating to a 15% year-over-year drop in iPhone shipments, according to Kuo's blog post on Tuesday about his latest supply chain survey.

Kuo wrote that Apple's weekly shipments in China have fallen by 30% to 40% from a year earlier in recent weeks, "and this downward trend is expected to continue."

"Apple may have the most significant decline among the major global mobile phone brands in 2024," Kuo wrote.

Huawei's comeback as a leading smartphone maker coupled with the "increasing preference for foldable phones among high-end users as their first choice" in the Chinese market are key reasons for the iPhone's potential decline, Kuo wrote. New phone designs integrating generative artificial intelligence are also altering the market.

Samsung has upped shipments of its new Galaxy S24 series this year by 5% to 10% as it sees "higher-than-expected" demand thanks to its AI-powered features, Kuo wrote. Apple, meanwhile, has lowered its shipment forecast for the iPhone 15 in the first half of 2024, he added.

With no major changes to the iPhone's designs expected until 2025 "at the earliest," Kuo wrote, Apple's "shipment momentum and ecosystem growth" are poised to diminish in the meantime.

## **Samsung Electronics' Semiconductor Business Reports Record Annual Loss**

Samsung Electronics on Wednesday posted a 34.57% drop in operating profit in the fourth quarter from a year ago, in line with its guidance issued earlier this month.

Samsung's fourth-quarter results versus estimates:

- **Revenue:** 67.78 trillion Korean won (about \$51 billion), vs. 69.27 trillion Korean won expected by LSEG analysts
- **Operating profit:** 2.82 trillion Korean won, vs. 3.43 trillion Korean won expected by LSEG analysts

Samsung's revenue for the quarter ending December fell 3.8% from a year ago, while operating profit dropped 34.57% in the same period. For the full year of 2023, its semiconductor business fell into a record loss of

14.88 trillion Korean won, from a 23.82 trillion Korean won profit a year earlier on the back of weak global demand, according to LSEG data.

Samsung is the world's largest maker for dynamic random-access memory chips which are found in consumer devices such as smartphones and computers.

In its earnings guidance earlier this month, Samsung said it expected operating profit for the October-December quarter to be 2.8 trillion South Korean won (\$2.13 billion), down 35% from the same period a year ago when the firm reported an operating profit of 4.31 trillion won.

Samsung said its fourth-quarter revenue and operating profit improved from the third quarter due to a recovery in memory chip prices and "continued strength" in sales of premium display products.

"We will focus on increasing sales of high value-added products to improve profitability," said Samsung in its earnings call on Wednesday. It said it would capture the rising demand for advanced products and those aimed at generative AI, as well as strengthening AI functionalities in smartphones and other products.

Daiwa Capital Markets in a Jan. 9 report said Samsung's revenue and operating profit estimates were "lower than our market estimates."

"We assume that memory business earnings improved sharply on increased memory shipment and prices," said SK Kim of Daiwa Capital Markets after Samsung's preliminary earnings.

As global macroeconomic headwinds persist, Samsung expects its earnings in the first six months of 2024 to show a "moderate improvement" followed by "a more significant improvement" in the second half of the year.

Samsung said fourth-quarter smartphone sales and profit declined from a quarter ago, in part from "fading effects" of new models launched in the third quarter.

In 2023, Apple overtook Samsung as the world's No. 1 in terms of smartphone shipments, commanding a market share of 20%, according to data from global market research firm International Data Corporation.

"Part of that was, frankly, because of a function of how the smartphone market was shifting toward the premium. That's why Apple was doing well because they're more concentrated on the premium, whereas Samsung has a broader breadth," said Bryan Ma, vice president of devices research at IDC, on CNBC's "Squawk Box Asia" on Wednesday.

Ma said that while Samsung slipped to world's No. 2, the average selling price of its smartphones increased by about \$100 from 2020 to 2023.

"So it's very representative of how the market has shifted towards premium. I think, as we go forward, that's going to continue to be one of the things that drive higher margins," said Ma.

In the first quarter, Samsung expects smartphone demand to drop due to seasonality but said the premium segment is likely to grow compared to the same period last year.

Samsung said it will "leverage" its new, AI-enabled Galaxy S24 smartphones, which are set to launch Wednesday, to boost sales.

“We aim to establish Samsung as the leading brand in the AI smartphone market,” said Samsung.

## **Memory Recovery to Continue in 2024**

Memory chip prices plummeted drastically last year due to inflationary pressures that have caused consumers to cut back on smartphone and PC purchases, as well as excess inventories of chips that companies stockpiled during the pandemic.

This has hit Samsung’s earnings hard, with its operating profit plunging 77.6% in the third quarter from a year ago. Other chipmakers such as Taiwan’s TSMC and SK Hynix have also reported declines in quarterly profits.

But the global PC market returned to growth in the fourth quarter, posting a modest year-on-year growth of 3%, according to global technology market analyst firm Canalys.

## **China Manufacturing Contracts for a 4th Straight Month in January**

A survey of factory managers in China released Wednesday shows manufacturing contracted in January for a fourth straight month, reflecting weak demand and a faltering recovery in the world’s second-largest economy. The official purchasing managers index, or PMI, rose slightly to 49.2 in January from 49.0 the month before. The PMI is on a scale up to 100 where 50 marks the cutoff between expansion and contraction. The manufacturing PMI has fallen in nine of the past ten months, rising only in September. Despite unexpectedly prolonged weakness after the pandemic, the economy grew at a 5.2% annual pace last year, though that also was influenced by slow growth in 2022 during the worst of the COVID-19 pandemic.

In recent months, Chinese policymakers have introduced measures to shore up the economy, including spending more on construction of infrastructure, cutting interest rates and easing curbs on home-buying. Last week, the central bank cut its reserve ratio requirement for banks, allowing banks to increase the amount of capital they can lend. Beijing is also looking to expand some loans to real estate developers amid an ongoing property crisis, as developers struggle with a cash crunch after a crackdown on excessive borrowing.

Apart from industrial activity, China’s non-manufacturing PMI rose to 50.7, the statistics bureau reported. The service sector PMI sub-index was 50.1, up from December’s 49.3.

## **Qualcomm Earnings Beat Estimates as Smartphone Chip Sales Suggest Recovery**

Qualcomm reported fiscal first-quarter results that topped analysts’ estimates as sales of handset chips jumped 16% from a year earlier. Qualcomm shares fell more than 1% in extended trading.

Here’s how the chipmaker did for the quarter ending Dec. 24, per consensus expectations from LSEG, formerly known as Refinitiv:

- **Earnings per share:** \$2.75 adjusted vs. \$2.37 expected
- **Revenue:** \$9.92 billion adjusted vs. \$9.51 billion expected

For the current quarter, Qualcomm said it expects adjusted earnings of between \$1.73 and \$1.93 per share on revenue of \$8.9 billion to \$9.7 billion. Consensus expectations, according to LSEG, were for earnings of \$2.25 per share on \$9.3 billion of revenue.

Net income rose 24% during the quarter to \$2.77 billion, or \$2.48 per share, from \$2.24 billion, or \$1.98 per share, a year ago.

Qualcomm is best known for making smartphone chips — both the modems that connect them to cellular networks, as well as the processors at the heart of high-end Android devices. Under CEO Cristiano Amon, Qualcomm has been working to apply its chip technology to markets beyond smartphones, including PCs, cars and virtual reality headsets. But it's still a major smartphone supplier as the global market has slumped over the past two years.

Qualcomm said it shipped \$6.69 billion in handset chips during the December quarter, up 16% year over year, a positive sign for the smartphone market after two years of declines. Qualcomm said it expected global handset sales would be flat year over year.

## **Microsoft Records Substantial Financial Growth Across the Board**

According to Microsoft's latest earnings report for the quarter that ended in December, the company's revenue grew by 17.58% to US\$62 billion, with gross profit, operating income, and net income recording double-digit rise year-on-year.

Revenue in the Intelligent Cloud segment increased by 20% from a year ago, driven by Azure and other cloud services revenue growth of 30%. Sales in the Productivity and Business Processes rose by 13% year-over-year, while revenue in the More Personal Computing increased by 19% for the same period. Among all products and services, the Devices business under the More Personal Computing segment was the only one that recorded sales fall from a year ago.

Microsoft chairman and CEO Satya Nadella said in the press release that the company had moved from talking about AI to applying AI at scale, and by infusing AI across every layer of our tech stack, it's winning new customers and helping drive new benefits and productivity gains across every sector.

Microsoft expects the Intelligent Cloud revenue for the current quarter to be US\$26-26.3 billion. Sales for the Productivity and Business Processes segment are anticipated to range from US\$19.3 billion to US\$19.6 billion, and revenue for More Personal Computing is expected to be between US\$14.7 billion and US\$15.1 billion.

Besides, Microsoft expects the Azure revenue growth to remain stable in the current quarter and server product revenue to grow in low- to mid-single digits. Windows OEM revenue for the current quarter is expected to be flat year-over-year, and the Devices business may keep declining in the January-March quarter.

Microsoft CFO Amy Hood said at the earnings call that capital expenditures for the last quarter were lower than expected due to delivery for a third-party capacity contract shifting from the previous quarter to the current quarter. Microsoft expects capital expenditures to increase materially sequentially, driven by investments in its cloud infrastructure and a flip of a delivery date from the third-party provider.

Microsoft completed the acquisition of Activision-Blizzard on October 13, 2023, and the results are reported in the More Personal Computing segment. Nadella said the acquisition added hundreds of millions of gamers to Microsoft's ecosystem. This transaction has allowed Microsoft to increase its revenue by US\$2.08 billion. However, due to an increase in operating expenses by US\$1.59 billion, the operating income has consequently decreased by US\$440 million.

## **Amazon Cloud Unit Speeds up Revenue Growth as Clients Adopt AI Services**

Amazon said on Thursday that its cloud division grew revenue 13% year over year in the fourth quarter, exactly in line with analysts' projections. The company pointed to growing traction in cloud services for artificial intelligence.

Many large technology companies have worked quickly to release new products or update existing ones to capitalize on corporate interest in replicating generative AI capabilities after startup OpenAI introduced the ChatGPT chatbot in late 2023. Amazon Web Services, for its part, introduced the Q chatbot for developers and nontechnical corporate workers, along with the Trainium2 chip for training AI models, in the fourth quarter.

AWS posted \$24.20 billion in revenue in the quarter. Analysts polled by StreetAccount had been looking for \$24.20 billion. Growth sped up from 12% in the third quarter. AWS now represents 14% of Amazon's overall revenue.

## **Worldwide Tablet Shipments Hit Their Lowest Level Since 2011 in 2023**

Worldwide tablet shipments declined 17.4% year over year in the fourth quarter of 2023 (4Q23), totaling 36.8 million units, according to preliminary data from the International Data Corporation (IDC) Worldwide Quarterly Personal Computing Device Tracker. This is the largest decline in fourth quarter tablet shipments since 2016. For calendar year 2023, worldwide tablet shipments totaled 128.5 million units, a decline of 20.5% compared to 2022 and the lowest annual volume since 2011.

"With no significant improvements to the economy and consumers allocating their money to things beyond consumer electronics, tablets may not be very high on the priority list. Project delays and spending freezes have also led to purchase postponement through much of 2023," said Anuroopa Nataraj, senior research analyst with IDC's Mobility and Consumer Device Trackers. "2024 is expected to show some rebound opportunities, provided the year is more economically sound. However, overall challenges remain in the tablet market, and technological advances around AI will likely focus more on the PC and smartphone for the next two years, but tablets will increasingly become part of that conversation."

Apple managed to retain its top spot in the tablet market, despite a notable decline in shipments for both the fourth quarter (-29.3%) and the full year (-19.8%). While this caused some erosion in Apple's 4Q23 market share, its full-year share was stable at more than 37% of the market. Samsung remained in second place with somewhat better results and little change in its market share for the quarter and the year. Xiaomi and Huawei both saw solid growth in the fourth quarter – 35.0% and 21.2% respectively. Xiaomi's aggressive marketing and expanding footprint worldwide helped the company to displace Amazon from the top 5 in 4Q23 while Huawei posted the best results among the top 5 companies for the full year, with shipments declining just 4.0% year over year.

## **Gartner Predicts Worldwide Shipments of AI PCs and GenAI Smartphones to Total 295 Million Units in 2024**

- **Shipments of AI PCs to Represent 22% of All PCs in 2024**
- **Shipments of GenAI Smartphones to Represent 22% of Basic and Premium Smartphones**
- **PC Shipments to Grow 3.5% in 2024; Smartphone Shipments to Grow 4.2% in 2024**

Worldwide shipments of AI PCs and generative AI (GenAI) smartphones are projected to total 295 million units by the end of 2024, up from 29 million units in 2023, according to a new forecast from Gartner, Inc. Gartner defines AI PCs as PCs that are equipped with dedicated AI accelerators or cores, neural processing units (NPUs), accelerated processing units (APUs) or tensor processing units (TPUs), designed to optimize and accelerate AI tasks on the device. This provides improved performance and efficiency in handling AI and GenAI workloads without relying on external servers or cloud services.

GenAI smartphones are designed smartphones equipped with hardware and software capabilities that enable seamless integration and efficient execution of GenAI-driven features and applications on the smartphone.

These smartphones are capable of locally running a base or fine-tuned AI model that generates new derived versions of content, strategies, designs and methods. Examples of this include Gemini Nano from Google, ERNIE from Baidu and OpenAI's GPT-4.

"The rapid adoption of on-device GenAI capabilities and AI processors will eventually become a standard requirement for technology vendors," said Ranjit Atwal, Senior Director Analyst at Gartner. "This ubiquity will pose challenges for vendors in differentiating themselves from competitors, making it harder to create unique selling points and drive increased revenues."

Gartner estimates 240 million GenAI smartphones and 54.5 million AI PCs will be shipped by the end of 2024 (see Figure 1). This will represent 22% of basic and premium smartphones and 22% of all PCs in 2024.

### **Smartphone Market to Return to Growth in 2024**

Like AI PCs, GenAI smartphones will not bolster smartphone demand until 2027. "The enhancements to smartphones evolve the current experiences with cameras and voice integration, but these capabilities are expected by users rather than demonstrating a new groundbreaking functionality. Users have the same expectation for the functionality of GenAI on their smartphone," said Atwal. "They are unlikely to pay a premium for GenAI smartphones without the availability of any groundbreaking applications."

The catalyst for transformative shifts in user experience lies in the advancement of smaller versions of large language models (LLMs) specifically tailored for smartphones. This evolution will transform smartphones into even more intuitive companions capable of comprehending and responding to human language and visual cues, which will elevate the overall user experience to new heights.

The smartphone market recorded its first quarter of growth in 4Q23 after nine consecutive quarters of decline. In 2024, worldwide smartphone shipments are expected to grow 4.2%, totalling 1.2 billion units year over year. "We should not interpret the growth in smartphone shipments as a full-fledged recovery," said Atwal. "It is more accurate to view it as a stabilization of lower level of units, which are nearly 60 million lower than in 2022."

### **PC CPU Shipments Grew Nearly 22% in Q4 Amid Robust Laptop and Desktop Sales**

After several quarters of steep decline, global PC sales returned to growth in Q4, 2023, as desktop and laptop shipments rose to more than 65 million units worldwide. A new report now reveals that the positive market sentiments and improved PC sales helped processor makers like Intel and AMD increase their CPU shipments both sequentially and year-over-year.

According to Jon Peddie Research, global client PC CPU shipments reached 66 million units in the fourth quarter of 2024, marking a seven percent increase over Q3 and an impressive 22 percent rise compared to Q4 2022. During the same period, iGPU shipments increased to 60 million units, suggesting that the vast majority of the CPUs sold came with integrated graphics. According to the report, iGPU sales grew by seven percent sequentially and 18 percent year-over-year.

Laptops have long been the preferred mode of computing for most consumers, as demand for notebook processors has outstripped desktop CPU sales for years. The latest data indicates that this trend is now becoming even more pronounced. In Q4 2022, desktop processors accounted for 37 percent of the market, but constituted only 30 percent of shipments during the same period last year, as mobile CPUs increased their market share from 63 percent to 70 percent.

The research also predicts a significant growth in iGPU penetration in client PCs, reaching 98 percent. This suggests that more people are expected to purchase PCs for general purposes rather than specialized GPU-intensive tasks like gaming, video editing, or 3D modeling. However, the research doesn't specify whether the gamer/enthusiast market will shrink in the coming years or if overall growth will be robust enough to allow both segments to grow simultaneously.

The report also provides a market share breakdown for Intel and AMD in the iGPU segment. As expected, Intel has the lion's share of the market, accounting for 84 percent, while AMD controls the remaining 16 percent. However, this represents a slight decline from Q4, 2022, when Intel's iGPU share stood at 87 percent, while AMD accounted for just 13 percent.

Interestingly, while client PC CPU sales increased year on year during the last quarter, server CPU shipments nosedived. According to the report, server CPU shipments in Q4 2023 increased by 2.8 percent sequentially from the previous quarter but were down by 26 percent from Q4 2022.

## DC Forecasts Artificial Intelligence PCs to Account for Nearly 60% of All PC Shipments by 2027

A new forecast from International Data Corporation (IDC) shows shipments of artificial intelligence (AI) PCs – personal computers with specific system-on-a-chip (SoC) capabilities designed to run generative AI tasks locally – growing from nearly 50 million units in 2024 to more than 167 million in 2027. By the end of the forecast, IDC expects AI PCs will represent nearly 60% of all PC shipments worldwide.

"As we enter a new year, the hype around generative AI has reached a fever pitch, and the PC industry is running fast to capitalize on the expected benefits of bringing AI capabilities down from the cloud to the client," said Tom Mainelli, group vice president, Devices and Consumer Research. "Promises around enhanced user productivity via faster performance, plus lower inferencing costs, and the benefit of on-device privacy and security, have driven strong IT decision-maker interest in AI PCs. In 2024, we'll see AI PC shipments begin to ramp, and over the next few years, we expect the technology to move from niche to a majority."

Until recently, running an AI task locally on a PC was done on the central processing unit (CPU), the graphics processing unit (GPU), or a combination of the two. However, this can have a negative impact on the PC's performance and battery life because these chips are not optimized to run AI efficiently. PC silicon vendors have now introduced AI-specific silicon to their SoCs called neural processing units (NPUs) that run these tasks more efficiently.

To date, IDC has identified three types of NPU-enabled AI PCs\*:

- **Hardware-enabled AI PCs** include an NPU that offers <40 tera operations per second (TOPS) performance and typically enables specific AI features within apps to run locally. Qualcomm, Apple, AMD, and Intel are all shipping chips in this category today.
- **Next-generation AI PCs** include an NPU with 40–60 TOPS performance and an AI-first operating system (OS) that enables persistent and pervasive AI capabilities in the OS and apps. Qualcomm, AMD, and Intel are all expected to launch future chips for this category, with delivery likely to begin in 2024. Microsoft is also expected to roll out major updates (and updated system specifications) to Windows 11 to take advantage of these high-TOPS NPUs.
- **Advanced AI PCs** are PCs that offer >60 TOPS of NPU performance. While no silicon vendors have announced such products, IDC expects them to appear in the coming years. This IDC forecast does not include advanced AI PCs, but they will be incorporated into future updates.

While shipments of hardware-enabled AI PCs will ramp up quickly over the next two years, next-generation AI PCs are forecast to dominate the market by the end of the forecast. IDC believes shipments of Next-generation AI PCs will be double that of hardware-enabled AI PCs by 2027. Many of these AI PCs will be sold to commercial buyers, but consumers will have much to look forward to in the coming AI PC age, including potential improvements in PC gaming and digital content creation.

There are three primary technical reasons for bringing AI workloads from the cloud to the client: to enhance performance by eliminating the round trip that current AI workloads must make to the cloud and back over the network; to enhance privacy and security by keeping data on the device versus in motion; and to lower the cost by limiting the need to access costly cloud resources.

### **Electronics Manufacturers Anticipate Revenue Growth Increase of 9.5 Percent in 2024**

Electronics Industry sentiment improved during January, with electronics manufacturers, on average, stating that they expect 5.2 percent revenue growth for 2023, with an increase to 9.5 percent in 2024, according to IPC's January 2024 Global Sentiment of the Electronics Supply Chain Report.

### **India PC Market Declined 6.6% YoY in 2023 to 13.9 Million Units**

The India Traditional PC market (inclusive of desktops, notebooks, and workstations) shipped 13.9 million units in 2023, down 6.6% year-over-year (YoY) according to new data from the International Data Corporation (IDC) Worldwide Quarterly Personal Computing Device Tracker. The desktop category grew by 6.7% YoY, notebooks and workstations declined by 11.1% YoY and 14% YoY respectively. The total market rebounded in 2H23 with 12.9% YoY growth after a weak first half. 4Q23 grew 11.4% YoY as both desktops and notebooks grew by 16.8% YoY and 9.9% YoY respectively.

In 2023, the consumer segment declined by 3.1% YoY and the commercial segment declined by 9.7% YoY due to reduced demand from enterprises. However, the education and government segments were strong in 2023, growing by 80.5% and 18% respectively. Both the consumer and commercial segments fared much better in 4Q23, growing YoY by 19.3% and 5.3% respectively.

### **Top 5 Company Highlights: 2023**

- **HP Inc.** led the market with a share of 31.5% in 2023 as it topped the charts in both the commercial and consumer segments with shares of 33.6% and 29.4% respectively. HP continued to lead both the desktop and notebook categories with 25.1% and 33.8% shares each. Growing demand in the education and government segments helped the vendor in the commercial segment while good momentum during festival sales helped the vendor in the consumer segment. The vendor's market share dropped in 3Q23 in the consumer segment; but it managed to gain it back in 4Q23 to a strong 32.5%. The vendor held a share of 32.6% in the total market in 4Q23.
- **Lenovo** was a distant second behind HP with a share of 16.7% in 2023. The vendor, however, witnessed a 17.8% YoY decline in shipments primarily due to a slowdown in the SMB segment and its minimal presence in the government and education space. It also lost share in the consumer segment as competition intensified during festive season sales. The vendor managed a share of 19.6% in the enterprise segment, 1.3 percentage points more than 2022. The vendor held third position in the total 4Q23 market, behind Dell with a share of 17.5%.
- **Dell Technologies** stood third with a share of 15.5% as it witnessed a steep decline of 24.5% YoY in 2023. It continued to hold second position in the commercial segment with a share of 20% while it held fourth position behind Lenovo in the consumer segment with a share of 10.8%. Enterprises have traditionally been one of the key strengths for Dell, so the delays in orders there impacted Dell the most. The vendor meanwhile was ahead of Lenovo in 4Q23 and held a share of 18.3% in the total market.

- **Acer Group** stood in fourth position with a share of 12.3% as it grew by 16.1% YoY in 2023. While it held fourth position in the commercial segment with a share of 15.7%, it stood fifth in the consumer segment with a share of 8.7%. With strong traction in the government and education segments, the vendor led the commercial desktop category with a share of 29.6%. The vendor claimed back fourth position in 4Q23 from Asus and held a share of 14% in India PC Market.
- **Asus** held fifth position behind Acer with a share of 7.9% despite a YoY growth of 8.6%. The vendor held second position in the consumer segment behind HP with a share of 15.1%. Asus managed to ship more than a million units in the consumer segment for the first time ever in 2023. The vendor, however, focused on inventory correction in 4Q23 and slid to fifth position behind Acer as it managed to hold a meagre 3.5% in the total market.

## **India's Smartphone Market Grew by 1% YoY in 2023 to 146 Million Units.**

According to the International Data Corporation's (IDC) Worldwide Quarterly Mobile Phone Tracker, India's smartphone market shipped 146 million smartphones in 2023, with a nominal 1% growth YoY (year-over-year). The second half of the year grew by 11% YoY in 2H23, compensating for the sharp 10% decline in the first half. 4Q23 grew by 26% YoY with shipments of 37 million units, as the second half of the quarter saw stronger than expected shipments with several new model launches.

Consumer demand remained stressed, leading to excess inventory levels across channels despite price corrections and schemes by the vendors. At the same time, the ASP (average selling price) hit a record of US\$255, rising 14% YoY in 2023. This also marks the third consecutive year of double-digit ASP growth restricting smartphone market recovery. The high ASP can be attributed to the increasing share of the premium-segment (US\$600+) from 6% in 2022 to 10% in 2023, along with a rapid uptake in 5G shipments to a record 55% share.

## **Key Highlights for 2023:**

- Shipments to online channels dropped by 6% and its share dropped to 49% in 2023, down from 53% in 2022. Offline channel shipments grew by 8% YoY as vendors strengthened their retail presence with lucrative premium offerings as well as an expansion into smaller towns and cities.

### *Price segment details:*

- The entry level (sub-US\$100) segment grew by 12% YoY to 20% share, up from 18% a year ago. While Xiaomi continued to lead, POCO (2<sup>nd</sup>) and Samsung (3<sup>rd</sup>) emerged in the top brand list.
- Shipments to the mass budget (US\$100<US\$200) segment declined, with its share dropping to 44% from 51%, declining by 12% YoY. vivo, Realme and Samsung together accounted for 53% of shipments.
- The entry-premium (US\$200<US\$400) segment remained flat, with 21% share. vivo and OnePlus had significant share, making up almost 40% of overall shipments in this price segment.
- The mid-premium segment (US\$400<US\$600) reached a share of 5%, growing by 27% YoY. OnePlus continued to lead with 35% share, followed by Samsung and vivo.
- The premium segment (US\$600<US\$800) reached 3% share, growing by 23%, led by the iPhone 13, Galaxy S23/S23 FE and OnePlus 11. While Apple's share declined, Samsung's share more than doubled in this segment.
- The super-premium segment (US\$800+) registered the highest growth of 86%, with its share up from 4% to 7%. The iPhone14/13/14 Plus together accounted for 54% of shipments, followed by the Galaxy S23+/S23/S22+/S23 Ultra with 22% share. Overall, Apple led the segment with a share of 68%, followed by Samsung at 30%.

- 79 million 5G smartphones shipped in 2023, with a plethora of launches in the mass budget segment. 5G ASPs dropped to US\$374, a decline of 5% YoY in 2023. Within 5G shipments, the mass budget

(US\$100<US\$200) segment share increased to 35% from 22% a year ago, while the entry-premium (US\$200<US\$400) segment continued to dominate with 38% share, albeit down from 49% in 2022. Apple's iPhone 13 & 14, Samsung's Galaxy A14, vivo's T2x and Xiaomi's Redmi12 were the highest shipped 5G models in 2023.

- Almost a million shipments of foldable phones shipped, with ASPs declining by 4% at US\$1,236. Samsung led the foldable phone market, although its share dropped to 73% in 2023 as other players such as Motorola, Tecno, OnePlus and OPPO have entered India's foldable market.

- The share of MediaTek-based smartphones increased to 50%, growing by 6% YoY. vivo's T2x, Xiaomi's Redmi A2, and Realme's C55 were the highest shipped MediaTek-based models. Qualcomm's share dropped to 25%, a shipment decline of 6% YoY.

### *Brand performance*

- Apple had a stellar year, finishing at 9 million units, despite having the highest ASP of US\$940. This was led by previous generation iPhone models and its push for local manufacturing. Its iPhone 13/14 were amongst the Top 5 shipped models annually.
  - As a brand, Samsung remained in the leadership position, with a record high ASP of US\$338, although with a 5% shipment decline YoY. Its Galaxy A14 was the highest shipped device of 2023.
  - vivo (excluding iQOO) climbed to the second slot as shipments and ASPs both grew by 8% and 9% respectively. It was the only brand to register growth amongst the top five brands.
  - Realme, despite facing challenges in the beginning of the year, maintained its third position, led by affordable launches.
- After declining for four consecutive years, 61 million feature phones shipped, growing by 8% YoY. While Samsung exited the feature phone segment, Transsion continued to lead, followed by Lava. The entry of Reliance Jio's new 4G feature phone fueled growth in 2H23.

"The road to recovery for smartphones in 2024 looks strained and elongated, as worries around income, inflationary stress, price increases, and inventories remain. 2023 was all about affordable 5G devices, timely price corrections, and offline channel expansion by brands, whereas 2024 and beyond requires greater efforts, especially at entry-level price points, to fuel organic growth," says Navkendar Singh, AVP, Client Devices Research, IDC India.

"IDC estimates a flat to low single digit annual growth in 2024, primarily led by upgraders in (US\$200<US\$400) segment, backed by financing schemes, extended warranties and upgrade programs," ends Singh.

### **Nvidia is Now Worth More Than Amazon Thanks to the AI Chip Boom**

Nvidia surpassed Amazon in market capitalization. It's a sign of strong demand for semiconductors that run cutting-edge artificial intelligence and the investor appetite for the companies that make the chips. Nvidia closed at \$721.28 per share, giving it a market value of \$1.78 trillion to Amazon's \$1.75 trillion market cap. While Nvidia also briefly passed Amazon on Monday, this is the first since 2002 that Nvidia is worth more after the market close.

Nvidia's main products in 2002 were graphics cards for gaming PCs. But Nvidia shares are up over 246% in the last 12 months on robust demand for its server AI chips that can cost more than \$20,000 each. Companies such as Microsoft, OpenAI and Meta need tens of thousands of them to run products such as ChatGPT and Copilot.

Amazon isn't slowing down, either. The company reported better-than-expected quarterly earnings Feb. 1 that showed it successfully reined in expenses after laying off 27,000 employees. Amazon shares are up about 78% in the past 12 months. Still, it shows there's an ongoing shuffle among the world's most valuable companies.

In January, for example, Microsoft surpassed Apple to become the most valuable U.S. company by market capitalization, largely on the strength of its cloud partnership with OpenAI and new AI features in Windows and Office.

### **India's Wearable Device Market Grew 34% in 2023 to 134 Million Units**

According to International Data Corporation's (IDC) India Monthly Wearable Device Tracker, 2023 ended with the India wearable market achieving a 34% growth to a record 134.2 million units. 4Q23 (Oct-Dec) saw 28.4 million units, growing 12.7% year-over-year (YoY). Though the festive period saw several new launches along with promotional offers and discounts, there was an overstocking situation through the second half of 2023. The average selling price (ASP) of overall wearables declined by 15.4% from US\$25.0 to US\$21.2 in 4Q23.

### **Gartner Predicts Search Engine Volume Will Drop 25% by 2026, Due to AI Chatbots and Other Virtual Agents**

By 2026, traditional search engine volume will drop 25%, with search marketing losing market share to AI chatbots and other virtual agents, according to Gartner, Inc.

"Organic and paid search are vital channels for tech marketers seeking to reach awareness and demand generation goals," said Alan Antin, Vice President Analyst at Gartner. "Generative AI (GenAI) solutions are becoming substitute answer engines, replacing user queries that previously may have been executed in traditional search engines. This will force companies to rethink their marketing channels strategy as GenAI becomes more embedded across all aspects of the enterprise."

### **Quality and Authenticity Will Be Focal Points as Virtual Agents Replace Traditional Search**

With GenAI driving down the cost of producing content, there is an impact around activities including keyword strategy and website domain authority scoring. Search engine algorithms will further value the quality of content to offset the sheer amount of AI-generated content, as content utility and quality still reigns supreme for success in organic search results.

There will also be a greater emphasis placed on watermarking and other means to authenticate high-value content. Government regulations across the globe are already holding companies accountable as they begin to require the identification of marketing content assets that AI creates. This will likely play a role in how search engines will display such digital content.

"Companies will need to focus on producing unique content that is useful to customers and prospective customers," said Antin. "Content should continue to demonstrate search quality-rater elements such as expertise, experience, authoritativeness and trustworthiness."

# 2024 World Cable Assembly Market

The **2024 World Cable Assembly Market** report offers an in-depth analysis of this growing and thriving industry. The worldwide cable assembly market will grow at a compound annual rate of 6.3% from 2023 to 2028. We are in a time of unsettled inflation, high interest rates, slowing world GDP, and an unstable geopolitical atmosphere, all influences on the world cable assembly market. After two years of growth, the cable assembly market underwent a contraction in 2023. Will we continue to witness a decline in this market, or will the market rebound, influenced by growth in the automotive, military/aerospace, and telecom/datacom markets?



2024 World Cable Assembly Market

Worldwide market share in the cable assembly market is beginning to stabilize and the shift overseas has slowed. The fastest growing market segment is telecom/datacom with a five-year CAGR of 8.0%. This market growth is primarily the result of the need for expanded network infrastructure and conversion to 5G, which has not progressed at the speed many anticipated. The automotive market, the largest cable assembly market sector, will continue to grow despite the continued shortage of semiconductors. Much of this growth will be in specialized high-voltage cable assemblies found in hybrid plug-in vehicles. After two decades of strong growth, China's cable assembly industry remains the largest in the world, but not only will they lose some market share in the out years, but by the end of the forecast they will have gained a very small percentage, primarily driven by domestic demand.

This 17-chapter, 230-page report provides a detailed analysis in US dollars for the years 2022 through 2028, by region, end-use equipment sector, and cable assembly type. Our analysis is provided numerically and graphically, allowing the reader to easily view and understand upcoming trends.

The **2024 World Cable Assembly Market** report includes analyses of important factors impacting the worldwide cable assembly market, as well as the economic trends and technology affecting each market sector within individual regions.

Benefits realized from this report include:

- A better understanding, in US dollars, of the size of the cable assembly market by region, market sector, and product type.
- Insight into five-year growth rates by region, market sector, and product type, allowing the reader to adjust, or realign, current business strategies to maximize future sales potential.
- A greater appreciation for the underlying economic elements that are driving and shaping the various market sectors.

# 2024 World Cable Assembly Market

The following tables and graph, with numbers redacted, show the type of analysis included in this report.

**World Cable Assembly Market by Region  
2022 to 2028**

Region	2022	2023	2024	2025	2026	2027	2028	5 Year CAGR
North America	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0.0%
Europe	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0.0%
Japan	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0.0%
China	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0.0%
Asia Pacific	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0.0%
Rest of World	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0.0%
<b>Total</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>0.0%</b>

\$ Millions

**World Cable Assembly Market  
Market Share by Region – 2023 to 2028**

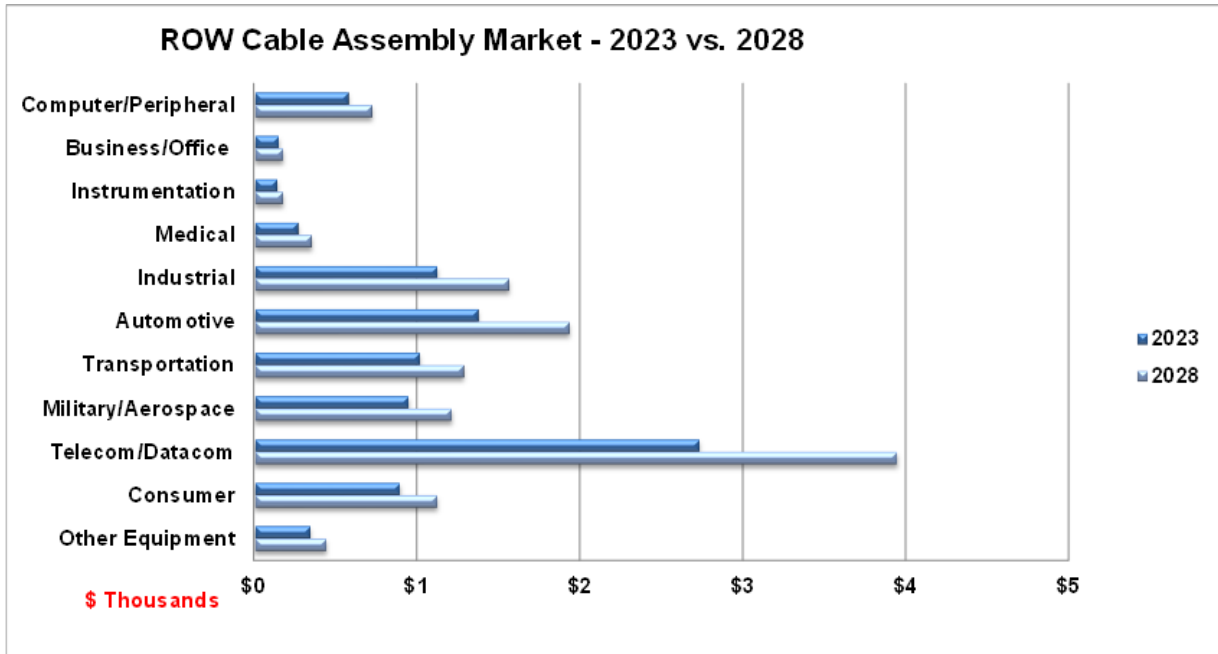
Region	2023	2024	2025	2026	2027	2028
North America	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Europe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
China	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asia Pacific	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rest of World	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>

**World Cable Assembly Market by Market Sector  
2022 to 2028F**

Total Market								5 Year CAGR
Market Sector	2022	2023	2024	2025	2026	2027	2028	
Computer/Peripheral	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Business/Office Equipmt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Instrumentation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Medical	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Industrial	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Automotive	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Transportation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Military/Aerospace	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Telecom/Datacom	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Consumer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Other Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
<b>Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>0%</b>

\$ Millions

# 2024 World Cable Assembly Market



## World Cable Assembly Market by Product Type 2028F

2028F ROW Market Sector	PCB	Rec- tangular	RF	Circular	Telephone	Fiber Optics	Heavy Duty	Power/High Voltage	Appl. Specific	Other	Total
Computer/Peripheral	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Business/Office Eqpt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Instrumentation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Medical	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Industrial	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Automotive	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transportation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Military/Aerospace	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Telecom/Datacom	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Consumer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Equipment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

**\$ Millions**

# 2024 World Cable Assembly Market

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Heavy Duty Assemblies  
Power/High Voltage Assemblies  
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Other Assemblies

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Medical Equipment  
Instrumentation Equipment  
Industrial Equipment  
Automotive  
Transportation Electronics  
Military/Aerospace  
Telecom/Datacom  
Consumer  
Other Equipment

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