



**World Electronic Circuits Council**

## **WECC Global PCB Production Report For 2024**

Published November 2024

A product of the partnership among these WECC associations  
on behalf of their members in the electronic circuits industry worldwide



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# ABOUT THE WECC GLOBAL PCB STATISTICAL PROGRAM

## Development Team

The World Electronic Circuits Council (WECC) is a strategic partnership formed in 1998 by the major industry associations serving member companies in the global electronic circuits industry. Its purpose is to increase the global influence and effectiveness of its member organizations for the benefit and improvement of the industry. The member associations cooperate on standards, market research, marketing, resource development, environmental issues, world trade, and economic and political affairs.

The member organizations of WECC formed a working group in 2005 to pool their statistical resources and produce a global statistical report on printed circuit board (PCB) production for the benefit of their members. This group became the WECC Statistics and Market Committee.

The following associations and their representatives contributed to this report and are active members of the WECC Statistics and Market Committee:

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Please contact a representative at your association with any questions about the report or suggestions for improving this program.

## Availability

The *WECC Global PCB Production Reports* are available only from these participating associations to their members. The reports are not available for sale.

## **Methodology**

The *WECC Global PCB Production Report* includes estimates of PCB production by country or region based on the data collected by the WECC organizations from their member PCB companies. The estimates in these reports may differ from estimates published by other organizations due to differences in methodology and sources. No source of data on worldwide PCB production can claim to be 100 percent accurate. There are only estimates based on data collected from representative samples of the companies in the industry.

WECC has published its *Global PCB Production Reports* since 2005. The reports are published annually. The data are collected by the associations and reported here in local currencies so that real growth rates can be shown. For the sake of comparability, all of the estimates are also reported in U.S. dollars. These nominal values are not adjusted for inflation or for fluctuations in exchange rates. Real growth rates are used in most cases to factor out the effect of currency fluctuations. A table of average exchange rates for the period is included as an appendix to this report.

## **Confidentiality Policy**

It is the WECC organizations' policy never to share any company-specific information with other associations (including the other WECC members) or with their member companies. Only aggregate data are shared for the compilation of this report. In this way, the WECC associations maintain complete confidentiality for all of their member companies.

## **Definitions**

PCB production attributed to a country or region reflects the value of the PCBs produced there, regardless of where the companies are headquartered, and should not be confused with the PCB market (i.e., where PCBs are sold).

Many flexible circuit producers also offer assembly and other value-added services. Because these producers sell assembled or partially assembled boards, it can be difficult for them to separate the value of the bare circuits from total sales. Although the contributors to this report have endeavored to subtract estimated assembly and component value from their flexible circuit data, the flexible circuit production estimates in this report might include some assembly revenue.

## 2023 PCB PRODUCTION VALUE

The member associations collected production data from companies producing PCBs in their countries or regions. Every effort was made to eliminate duplication between the associations' survey samples. The countries and regions included in this analysis produce almost all of the world's PCBs, based on value. These are estimates of bare circuit value.

### Estimates of 2023 PCB Production in the World's Major PCB-Producing Areas

#### In millions of local currencies

Country or Region Where PCBs Were Produced	Rigid 1-2 Sided	Standard Multilayer	HDI/ Microvia/ Build-Up	IC Substrate	Flexible Circuits	Rigid Flex	Others	Total Aggregate Data	Currency
China	5,222	24,103	8,382	2,029	5,771	367	0	45,874	USD
India	21,930	10,750	5,595	0	500	2,187	6,918	47,880	INR
Japan	133,666	191,317	44,126	395,356	51,128	8,782	44,494	868,870	JPY
South Korea	537,045	1,628,430	800,000	5,176,500	656,000	1,410,500	0	10,208,475	KRW
Taiwan	14,124	47,668	48,257	90,615	59,994	3,847	1,230	265,735	TWD
Other Asia	54,859	148,997	72,857	57,117	184,483	3,531	10,006	531,850	JPY
Middle East & Africa	44	34	28	0	8	35	15	164	USD
Western Europe	246	677	260	1	207	135	85	1,610	EUR
Central Europe	43	53	2	0	1	1	2	102	EUR
Others Europe	35	45	50	1	10	0	8	149	EUR
North America	285	2,154	339	16	411	0	0	3,205	USD

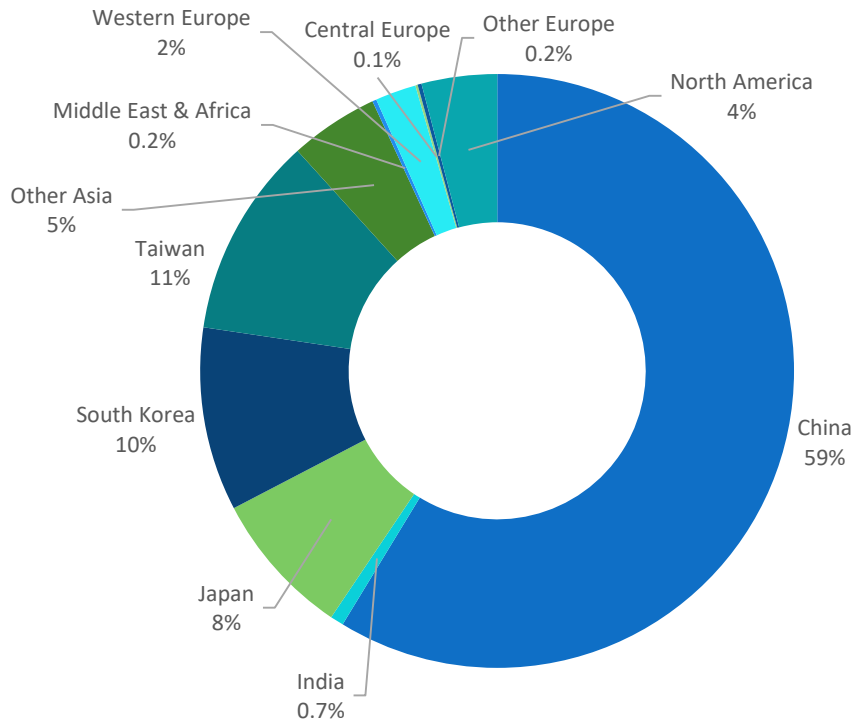
#### In millions of U.S. dollars

Country or Region Where PCBs Were Produced	Rigid 1-2 Sided	Standard Multilayer	HDI/ Microvia/ Build-Up	IC Substrate	Flexible Circuits	Rigid Flex	Others	Total Aggregate Data
China	5,222	24,103	8,382	2,029	5,771	367	0	45,874
India	261	128	67	0	6	26	82	570
Japan	951	1,362	314	2,814	364	63	317	6,184
South Korea	411	1,246	612	3,962	502	1,079	0	7,813
Taiwan	453	1,530	1,549	2,908	1,925	123	39	8,528
Other Asia	390	1,060	519	406	1,313	25	71	3,785
Middle East & Africa	44	34	28	0	8	35	15	164.0
Western Europe	266	732	281	1	224	146	92	1,741
Central Europe	46	57	2	0	1	1	2	110
Other Europe	38	49	54	1	11	0	0	161
North America	285	2,154	339	16	411	0	0	3,205
<b>Global Total</b>	<b>8,368</b>	<b>32,455</b>	<b>12,146</b>	<b>12,137</b>	<b>10,536</b>	<b>1,865</b>	<b>619</b>	<b>78,134</b>

#### Notes:

1. Flexible circuit and rigid flex estimates may include some assembly revenue.
2. The "Others" product category includes Metal Core PCB in Taiwan, IMS, 3D, wire laid in Western Europe, IMS in Central Europe. "Others" in other regions are unknown.
3. Other Asia includes Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. Other Asia data were provided by JPCA. Japanese companies account for more than 70 percent of PCB production in Other Asia.
4. In the case of Hong Kong, which had been doing data for years, it is excluded from 2021 data, because most of them are produced in China, so the figure in HK is very small and isn't significant at all.
5. The Middle East & Africa include [Israel, Anatolia, Iran and Tunisia](#). This data was submitted by [IPC Europe Data4PCB](#).
6. Until 2020, it was divided into Western and Eastern Europe, but this time data was collated in Western, Central and other Europe, so it was divided like this.
7. W. Europe includes Austria, Switzerland, Belgium, Netherlands, France, Germany, Italy, Spain, Denmark, Finland, Sweden, UK. [Central Europe includes Estonia, Macedonia, Serbia, Bulgaria and Ukraine](#). [Other Europe includes Eastern Europe \(Belarus, Russia and Georgia\)](#). This data was submitted by [IPC Europe Data4PCB](#).
8. The revenue estimates in this report are nominal and have not been adjusted for inflation.
9. Please see the appendix on exchange rates to determine the impact on amounts in specific currencies
10. Totals may vary slightly from the sums of the numbers in the table due to rounding.

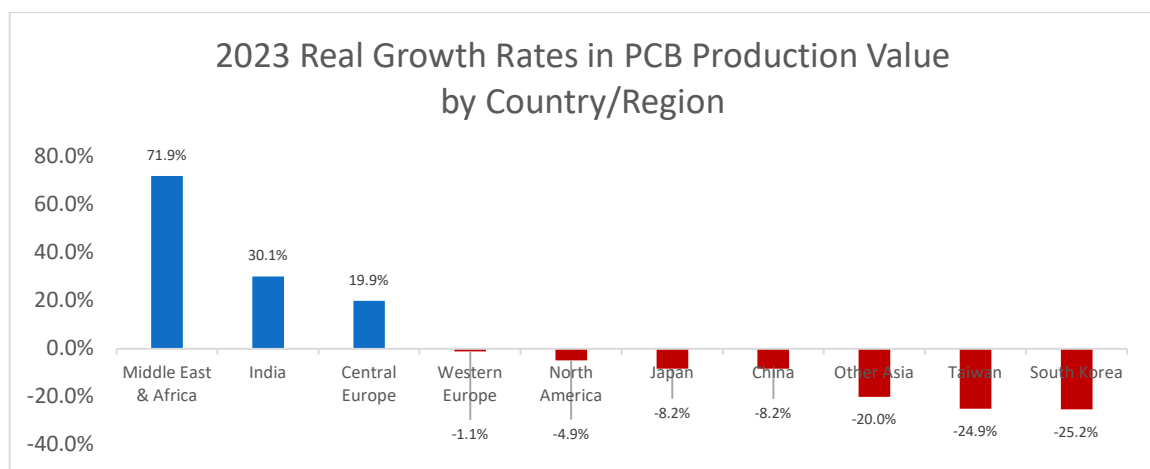
## PCB PRODUCTION BY COUNTRIES & REGIONS IN 2023 BY WECC MEMBER ASSOCIATION



# INDUSTRY GROWTH

## Real Growth by Country/Region

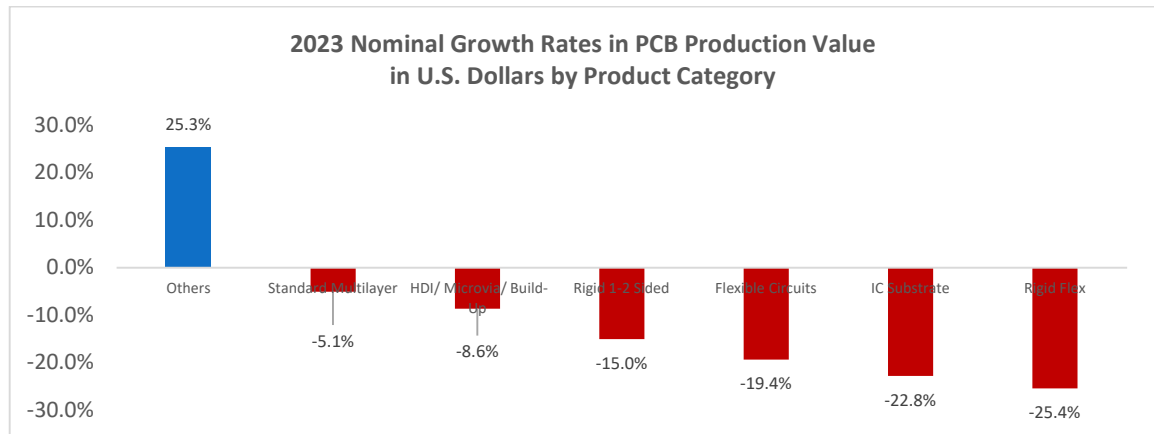
The data shows that the Middle East & Africa region saw a substantial performance boost with a 71.9% increase, while India also achieved a significant rise of 30.1%. Central Europe followed a positive trajectory with a 19.9% growth. Conversely, Western Europe had a slight dip of 1.1%, and North America encountered a more notable decrease of 4.9%. While both Japan and China experienced reductions of 8.2%, Other Asia followed a downward trend with a 20.0% decline. Taiwan and South Korea recorded the steepest drops, with decreases of 24.9% and 25.2%, respectively.



\*Other Asia includes Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.

## Nominal Growth by Product Category

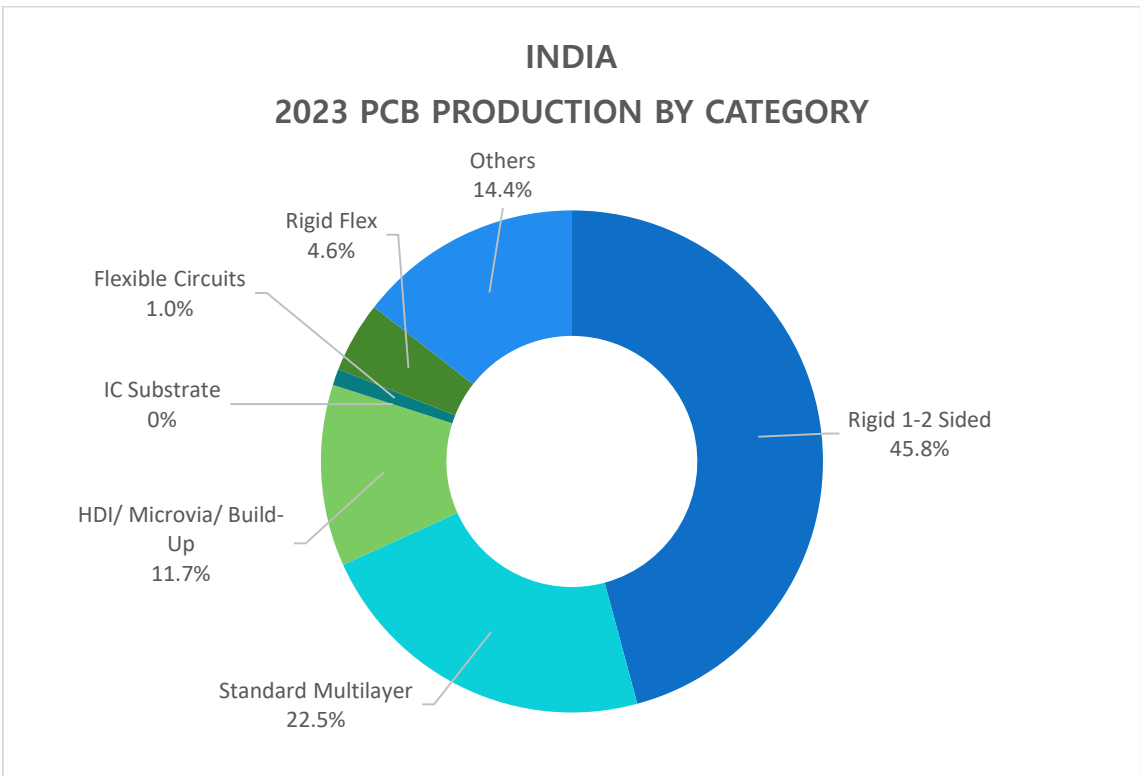
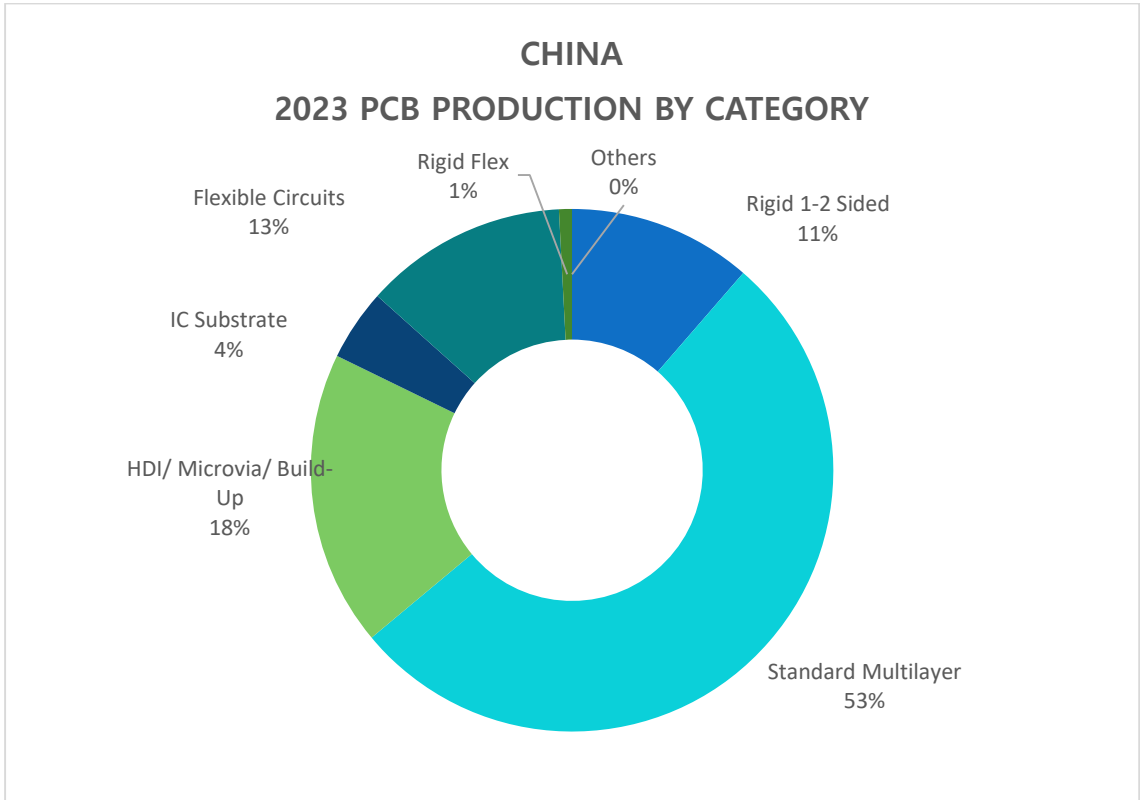
In 2023, PCB production growth was negative across most product categories, with the exception of “Others,” which saw a notable increase of 25.3%. Standard Multilayer products experienced a modest decline of 5.1%, and HDI/Microvia/Build-Up decreased by 8.6%. Rigid 1-2 Sided products decreased by 15.0%, and Flexible circuits also fell by 19.4%. On a steeper decline, IC substrates dropped by 22.8%, and Rigid Flex recorded the largest decrease, also at 25.4%.



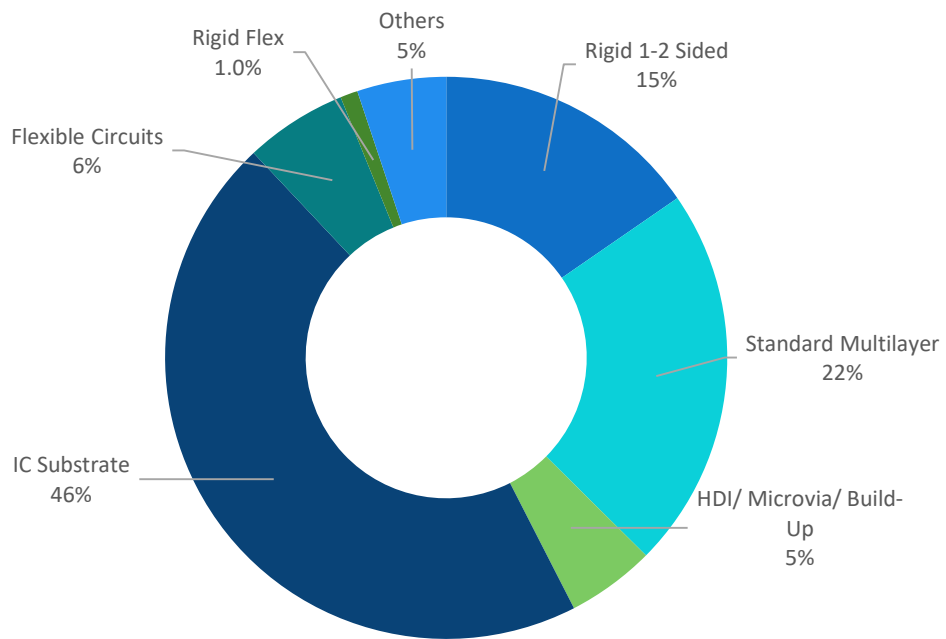
# COUNTRY AND REGIONAL PROFILES

## PCB Product Categories

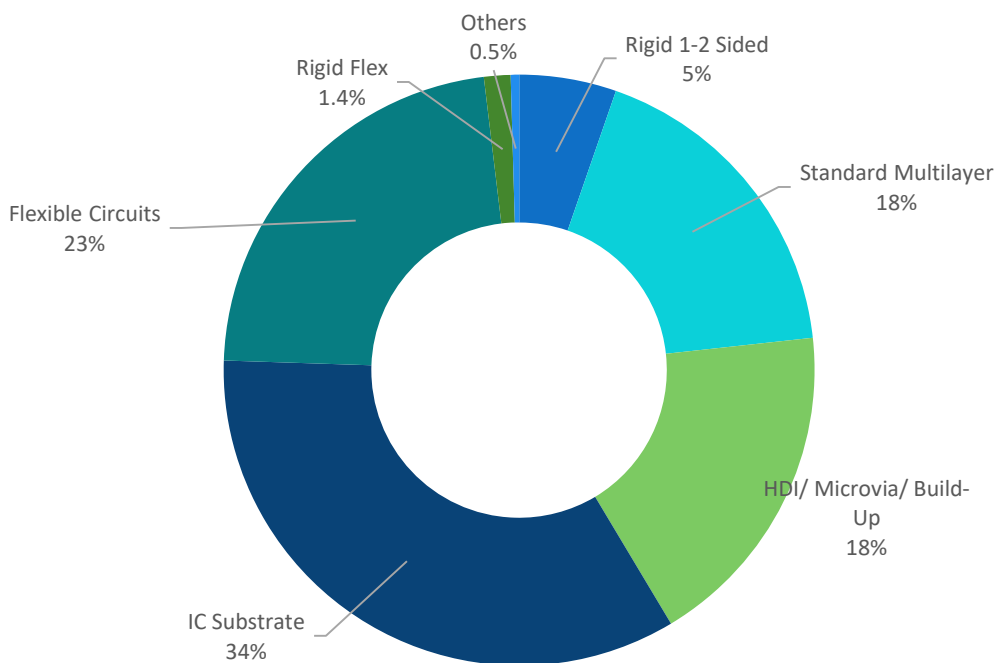
Note: Where percentages add up to more than 100 percent, this is due to rounding.



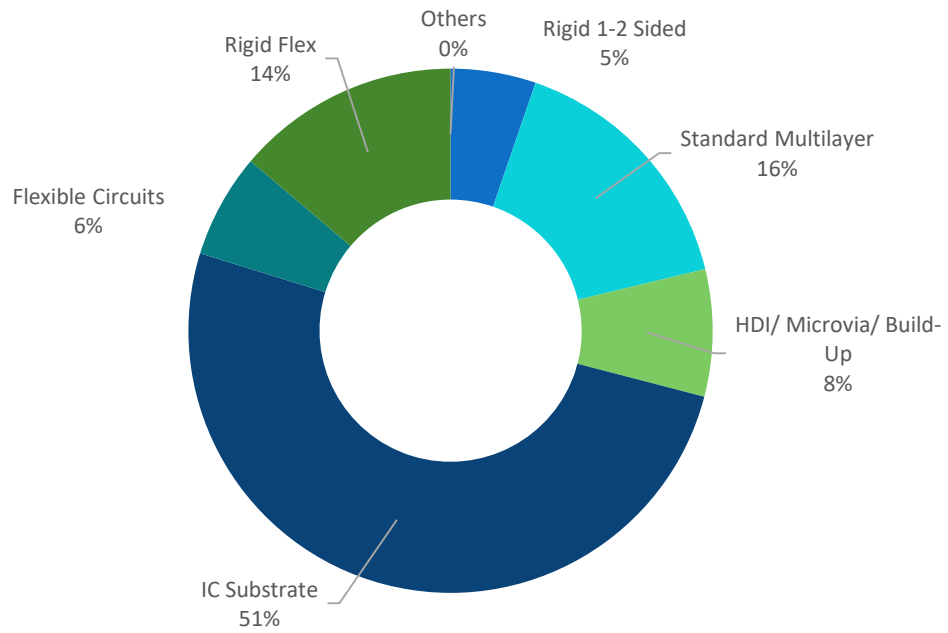
### JAPAN 2023 PCB PRODUCTION BY CATEGORY



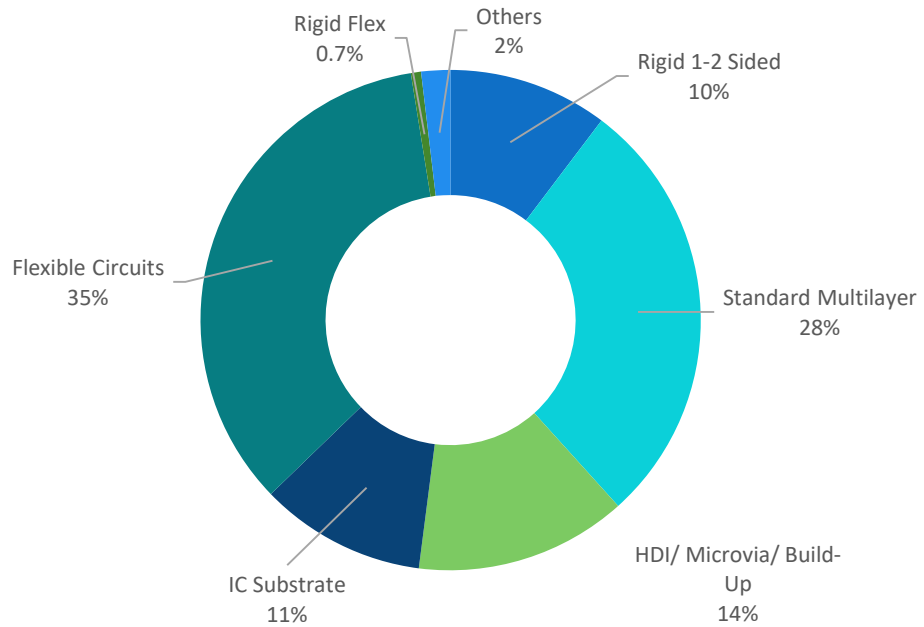
### TAIWAN 2023 PCB PRODUCTION BY CATEGORY



**SOUTH KOREA**  
**2023 PCB PRODUCTION BY CATEGORY**

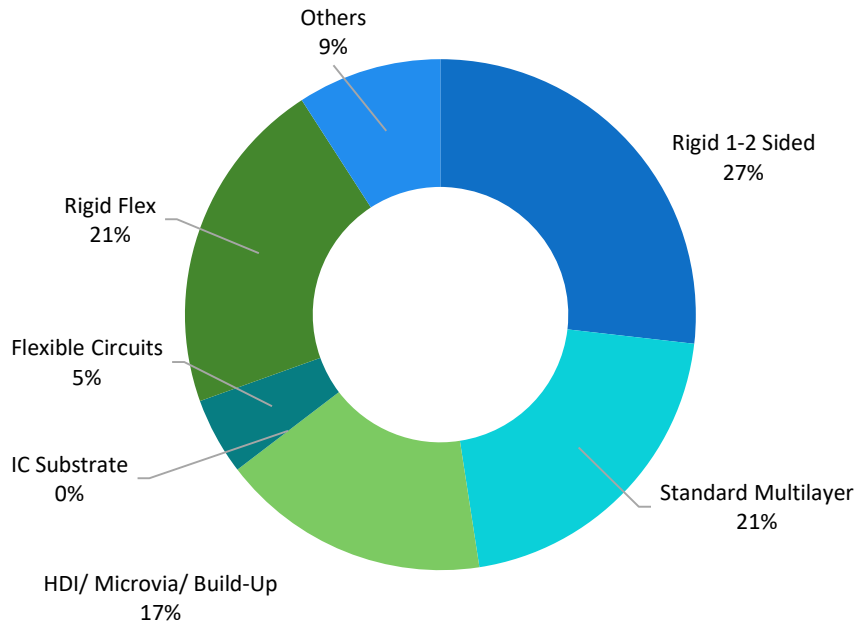


**OTHER ASIA**  
**2023 PCB PRODUCTION BY CATEGORY**



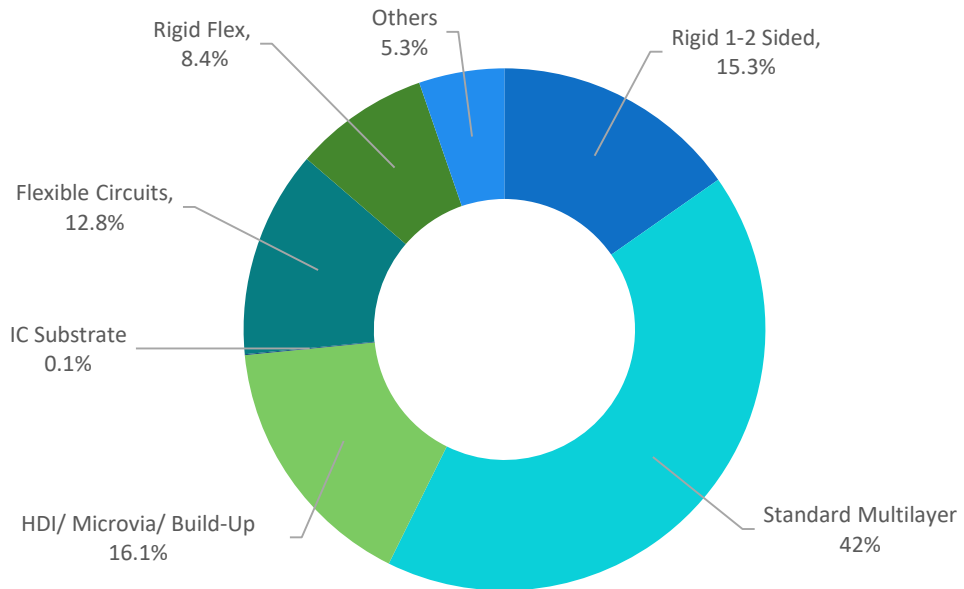
\*Other Asia includes Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.

**MIDDLE EAST & AFRICA  
2023 PCB PRODUCTION BY CATEGORY**



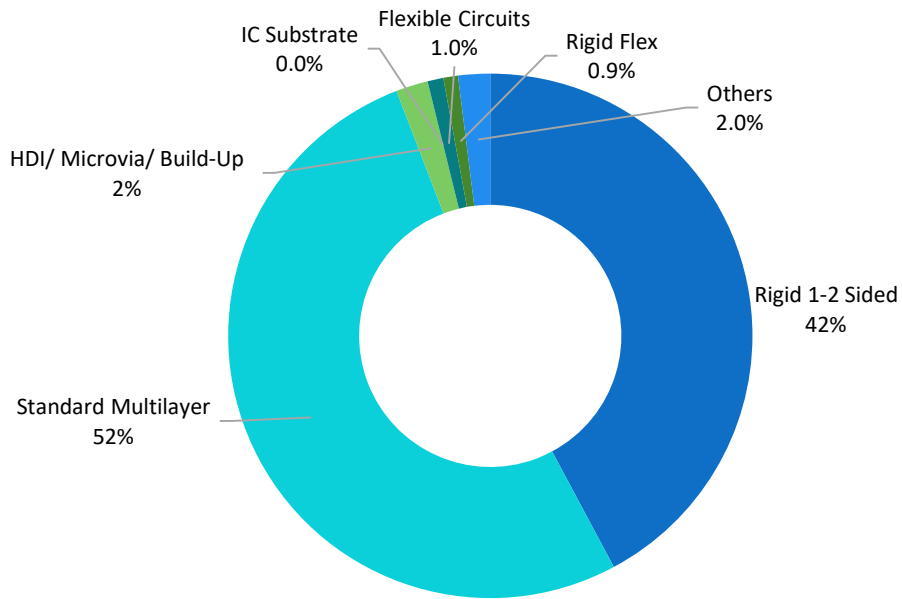
\*Middle East & Africa includes Israel, Tunisia, South Africa, Iran and Anatolia.

**WESTERN EUROPE  
2023 PCB PRODUCTION BY CATEGORY**



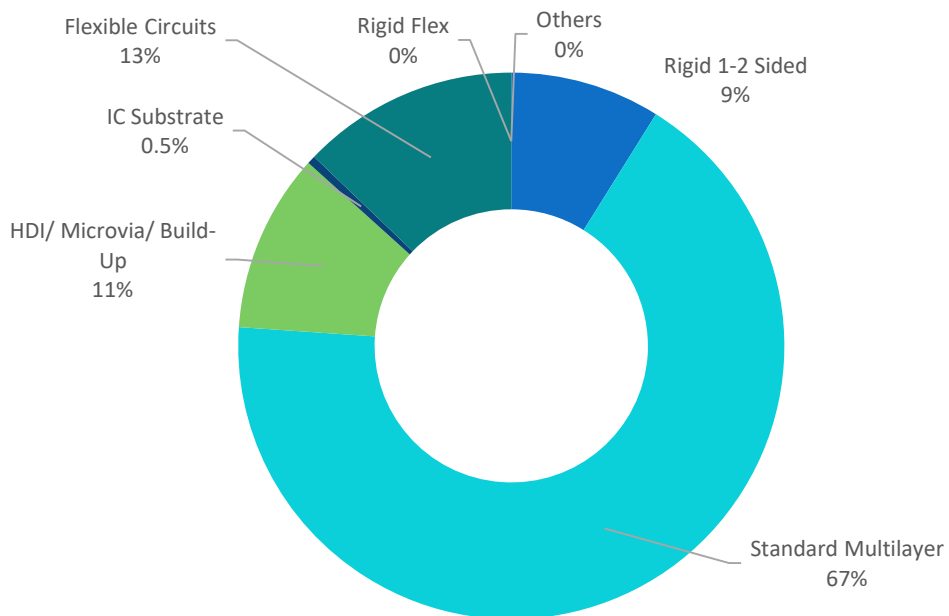
\*Western Europe includes Austria, Switzerland, Belgium, Netherlands, France, Germany, Italy, Spain, Denmark, Finland, Sweden, UK.

**CENTRAL EUROPE  
2023 PCB PRODUCTION BY CATEGORY**



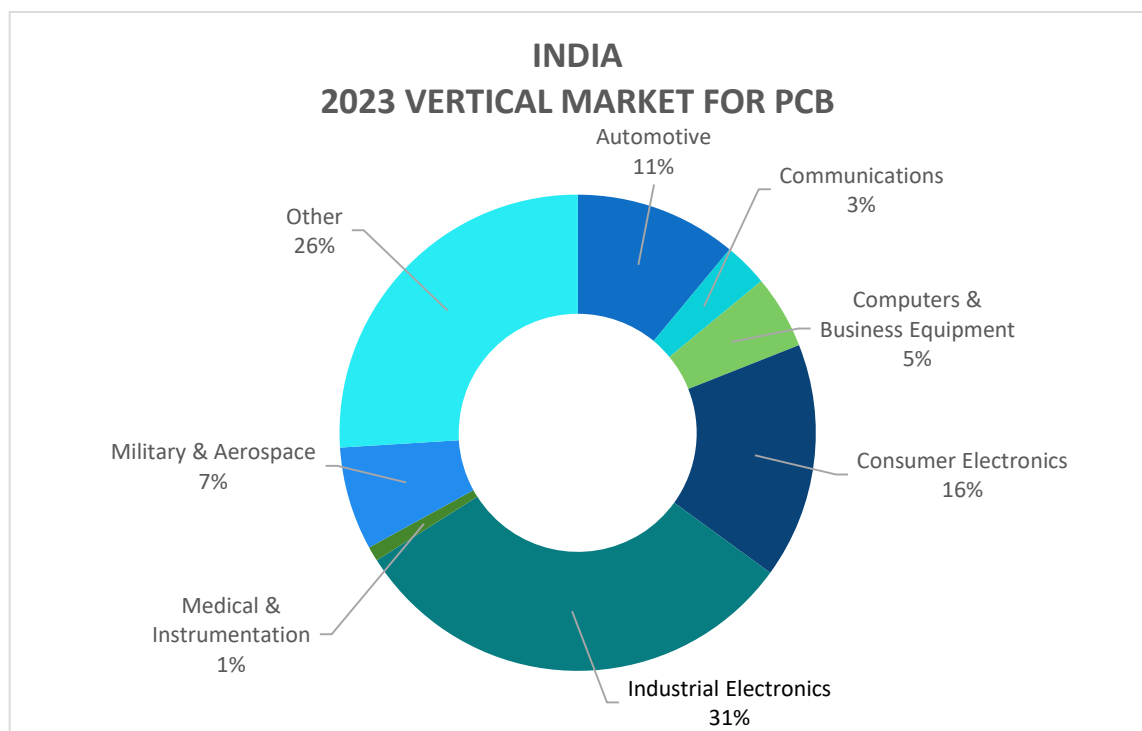
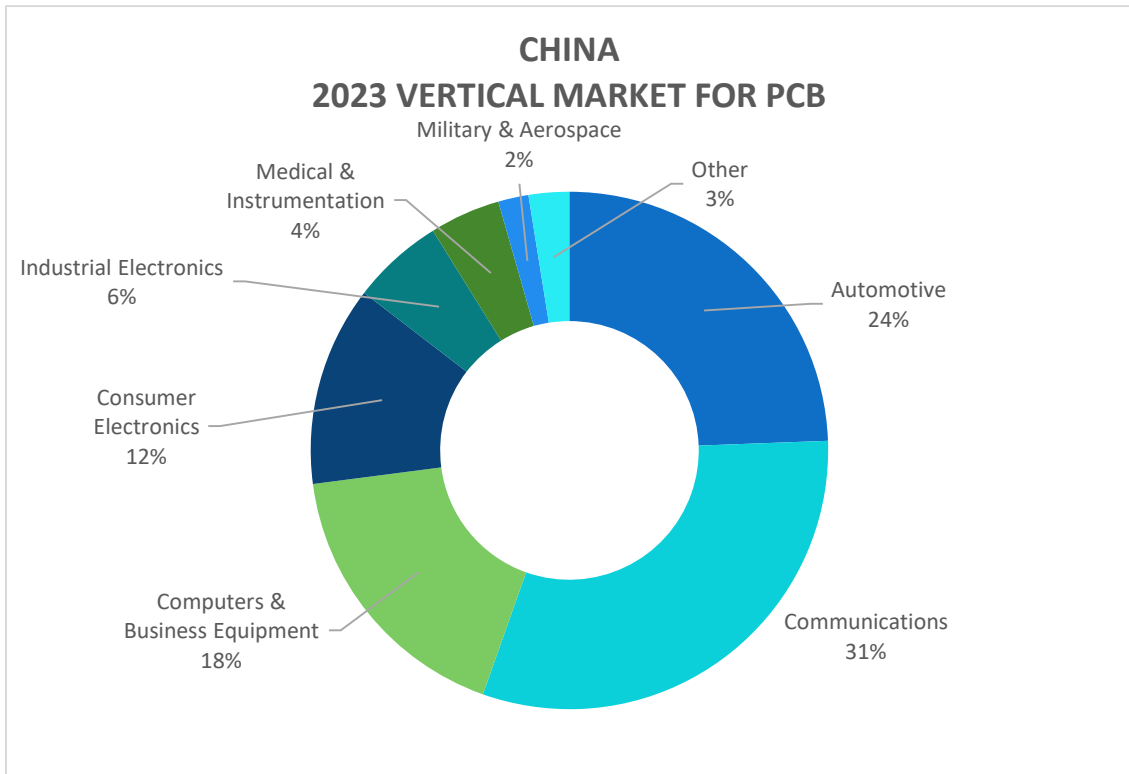
\* Central Europe includes Estonia, Macedonia, Serbia, Bulgaria and Ukraine.  
 \* Other Europe includes Eastern Europe (Belarus, Russia and Georgia).

**NORTH AMERICA  
2023 PCB PRODUCTION BY CATEGORY**

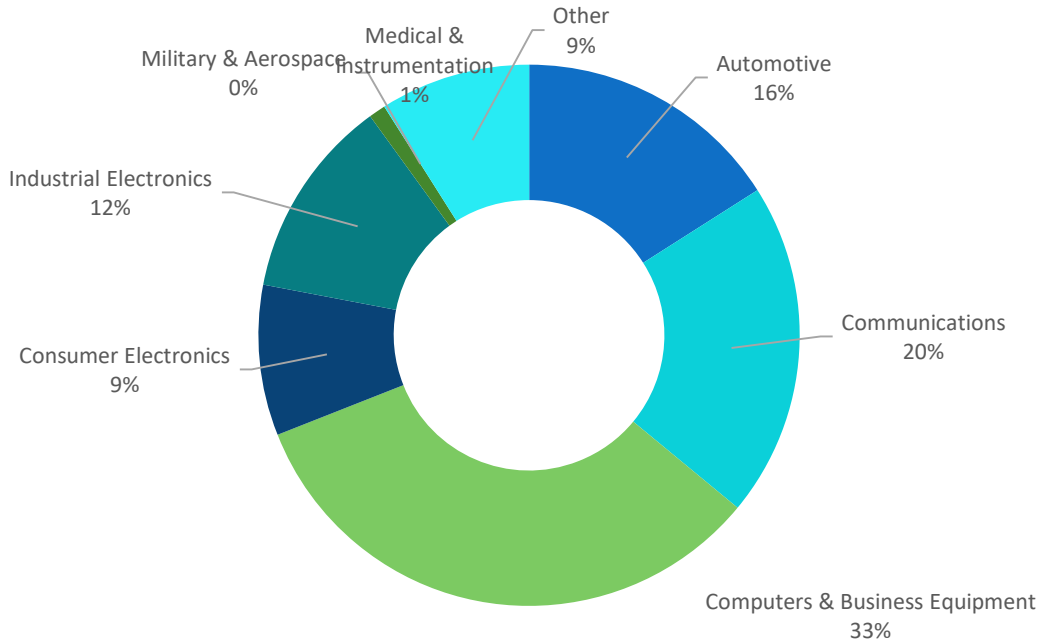


## PCB Vertical Markets

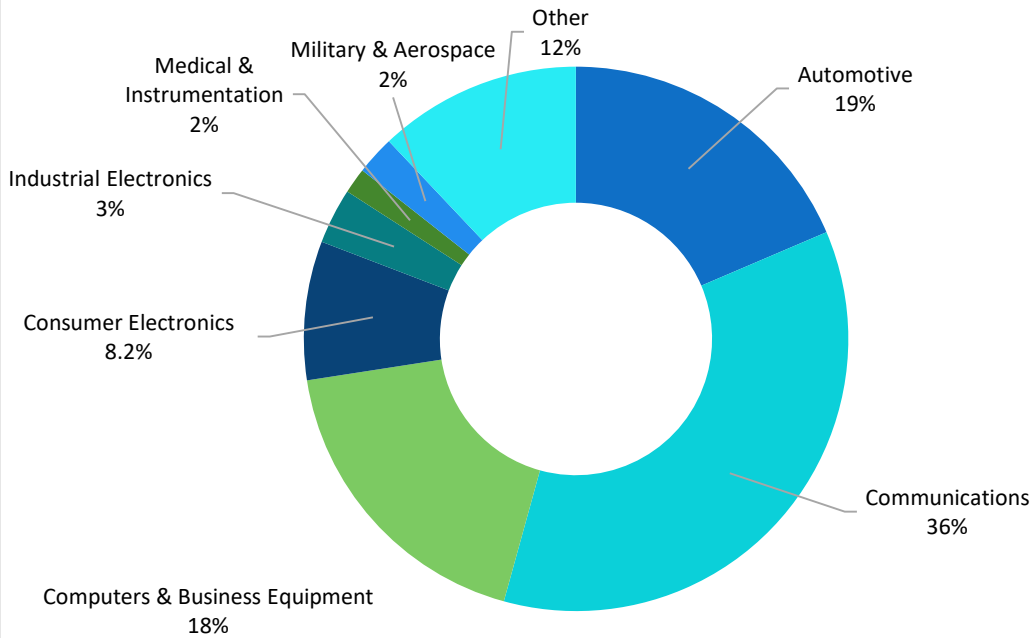
Please note that it is not advisable to compare the vertical market percentages to those in reports from prior years. This measurement is heavily affected by the sample of companies reporting data to the WECC member associations, which may change somewhat from year to year. These percentages are not statistically significant and should be considered only in relation to one another within the same report. Where percentage add up to more than 100 percent, this is due to rounding.



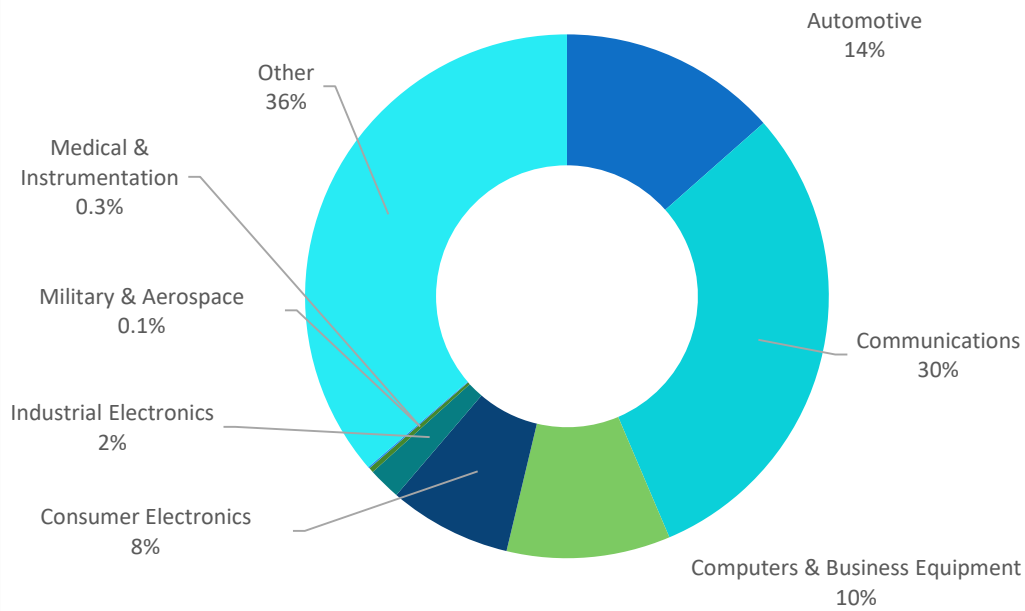
**JAPAN**  
**2023 VERTICAL MARKET FOR PCB**



**SOUTH KOREA**  
**2023 VERTICAL MARKET FOR PCB**

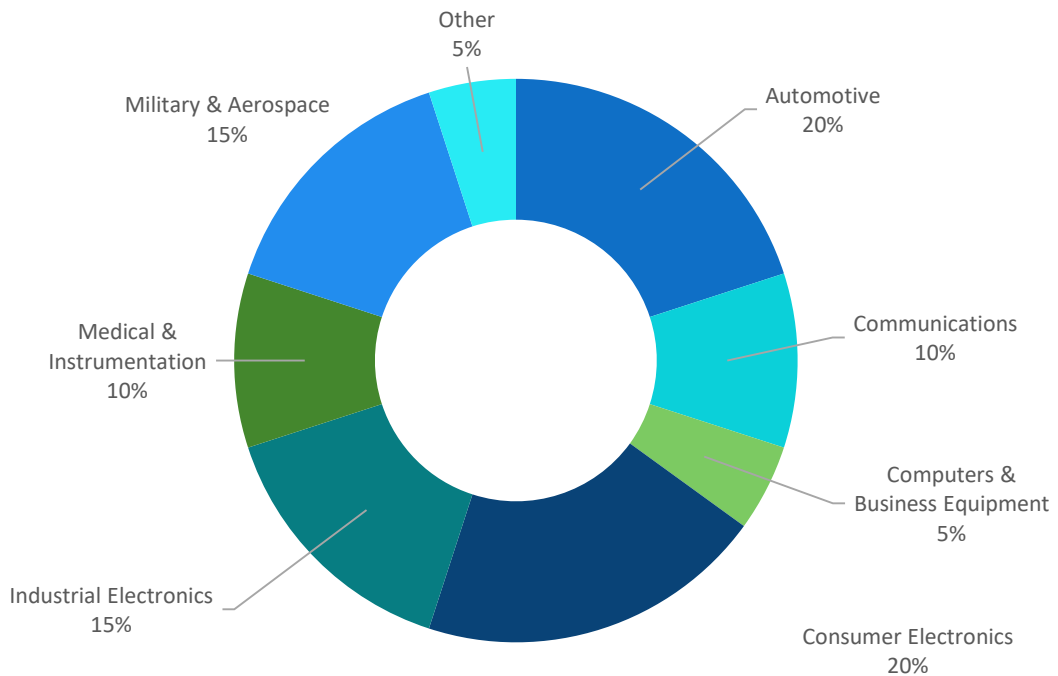


### TAIWAN 2023 VERTICAL MARKET FOR PCB

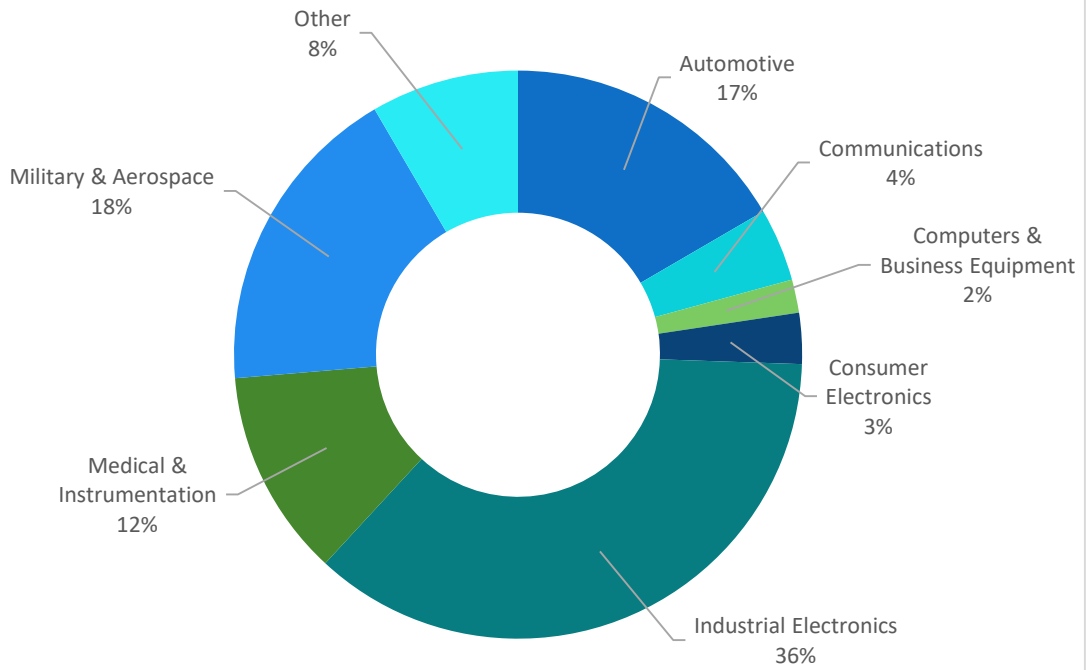


\*Other: Semiconductor, Lighting & LEDs, Office equipment, and Others

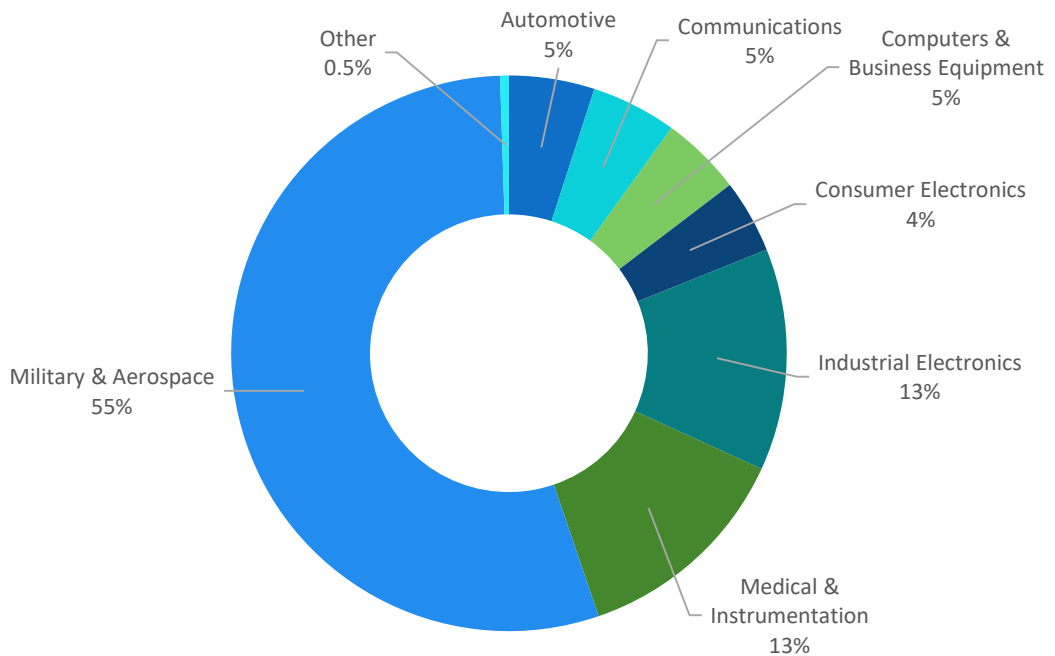
### MIDDLE EAST & AFRICA 2023 VERTICAL MARKET FOR PCB



**EUROPE  
2023 VERTICAL MARKET FOR PCB**



**NORTH AMERICA  
2023 VERTICAL MARKET FOR PCB**



## APPENDIX

### Average U.S. Dollar Exchange Rates for 2022 and 2023

#### Exchange Rates From US Dollar

		2022 Average Exchange Rate (=1.00 USD)	2023 Average Exchange Rate (=1.00 USD)	Currency (ISO Code)	% Change
ASIA/PACIFIC	China	6.73	7.08	CNY	5.1%
	India	78.60	82.57	INR	5.1%
	Japan	131.45	140.51	JPY	6.9%
	South Korea	1291.73	1306.68	KRW	1.2%
	Taiwan	29.83	31.16	TWD	4.5%

		2022 Average Exchange Rate (=1.00 USD)	2023 Average Exchange Rate (=1.00 USD)	Currency (ISO Code)	% Change
EUROPE	EU	0.9500	0.9250	EUR	-2.6%

		2022 Average Exchange Rate (=1.00 USD)	2023 Average Exchange Rate (=1.00 USD)	Currency (ISO Code)	% Change
MIDDLE EAST & AFRICA	Israel	3.36	3.68	ILS	9.5%

		2021 Average Exchange Rate (=1.00 USD)	2022 Average Exchange Rate (=1.00 USD)	Currency (ISO Code)	% Change
THE AMERICAS	USA	1.00	1.00	USD	0.0%

Source:

<https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates>



**World Electronic Circuits Council**