







Semiconductor Supply Chain

By: Joe Corbisiero on April 12th, 2024









Latest update April 12th. Original article published on April 4th

A 7.4 magnitude earthquake shook Taiwan on Wednesday, threatening the supply chain for 92% of the globe's advanced semiconductors. The quake struck at around 8 am local time just 11 miles southwest of Hualien City. Semiconductor manufacturers such as Taiwan Semiconductor Manufacturing Co. (TSMC), United Microelectronics Corp. (UMC), and Powerchip Semiconductor Manufacturing Corp (PSMC) halted production and evacuated plants after the quake.

Taiwan is home to 60% of all semiconductor manufacturing. These semiconductor facilities are equipped with top-tier capabilities for various stages of semiconductor production, including fabrication, processes, assembly, packaging, and testing.

Earthquake Impact on Taiwan Semiconductor Manufacturing Co. (TSMC)

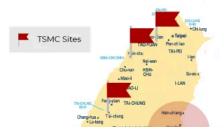
(April 8th Update) According to **Reuters**, TSMC said on April 5th that, except for certain production lines in areas of greater impact from the earthquake, equipment in the TSMC fabs have largely been fully recovered. TSMC said it was still assessing the full impact of the earthquake.

TSMC is the leading Al chipmaker, producing chips for tech leaders like Apple, Microsoft, and NVIDIA.

According to Reuters, TSMC said that a small number of tools were damaged at certain facilities, partially impacting those operations. The report also says [TSMC] overall tool recovery of its fabrication facilities exceeded 80% as of Thursday. New fabs, such as the Fab 18 in Tainan, are expected to reach full recovery.

However, according to a report from **DigiTimes**, there was no damage to critical equipment, including all of TSMC's most advanced extreme ultraviolet (EUV) lithography machines that make top-of-the-line processors for artificial intelligence and mobile phones.

2024 Taiwan Earthquake TSMC Chip Fabrication Sites







If fabrication sites remain impacted, we can expect delays in semiconductor production. Taiwan is currently on holiday, so we expect more information to come.

Impacts to Other Component Manufacturers

In the wake of the earthquake, many companies are inspecting the damage to their facilities and assessing the production impacts:

Micron (April 11th Update): The company **announced** that it's DRAM production for the quarter would be impacted by 'up to a mid-single digit percentage.' Micron, which has 4 production facilities in Taiwan, said it was not yet at full DRAM production following the earthquake, but added there would be no impact to its long-term DRAM supply capability.

United Microelectronics Corp (April 8th Update): In a **press release**, UMC announced the earthquake had "no material impact on UMC's operation." UMC did admit that fabs in Hsinchu and Fab 12A in Tainan triggered safety measures and some wafers were affected, but operations and wafer shipment are resuming as normal.

United Microelectronics Corp: The third largest chipmaker evacuated production facilities, and "Some chipmaking machines did stop, and now [UMC] is working to restart the production machines as soon as possible," according to **Nikkei Asia**.

Winbond Electronics: Some machinery at the CTSP Fab and Kaohsiung Fab activated self-protection mechanisms due to the earthquake, but overall, there was **no significant impact** on the company's operations and finances.

Nvidia: Nvidia, whose popular AI chips are manufactured by TSMC, **said** it had consulted with its manufacturing partners and the firm does not expect supply chain disruptions from the earthquake.

Tracking Supply Chain Disruption Impacts with SiliconExpert

TSMC is a semiconductor manufacturing site for many downstream companies. According to the **TSMC** company website, in 2023, TSMC served 528 customers and manufactured 11,895 products for various applications covering a variety of end markets including high performance computing, smartphones, the Internet of Things (IoT), automotive, and digital consumer electronics. SiliconExpert is already noticing potential production impacts triggering various alerts to SCRM customers.





to forging processes and systems to handle disruption based on a part's total risk."

Dwight Morse, Supply Chain Expert | SiliconExpert

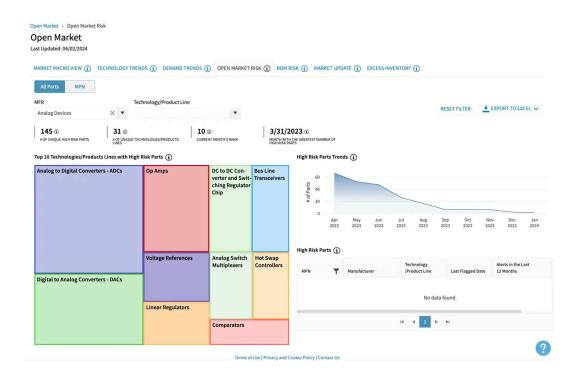
DOWNLOAD GUIDE

Taiwan Earthquake Response

SiliconExpert has created this guide to help you better understand the potential impact this event could have on your Supply Chain and how to respond.

Taiwan Earthquake Response Guide

Early warning signals of market changes, including shortages, would be noticeable in the market behavior data found within SiliconExpert's Open Market tool. As of April 8th, 2024, no such signals were apparent. Should this change, it could mean that the situation may indeed be driving a shortage market, further challenging procurement efforts. SiliconExpert's Open Market experts encourage closely monitoring this data as the situation continues to unfold.





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