

India's First Indigenous Microprocessor

***Prelims:** Current events of national and international importance*

Why in news?

Union IT Minister presented India's first fully indigenous microprocessor to PM Modi at Semicon India 2025, in New Delhi.

- **Fully indigenous** - The first fully indigenous microprocessor of India - is a type of semiconductor chip, called **Vikram 3201**.

In 1971, the intel company launched a chip called the 4004 - as the world's first microprocessor - "a micro-programmable computer on a chip".

- **Developed by** - The semiconductor laboratory of the Indian Space Research Organisation (ISRO).
- **Microprocessor** - It is an integrated circuit that serves as the brain of a computer, performing calculations, logic operations, and controlling other components by executing program instructions.
- **Integrated circuit (IC)/Chip** - microprocessor is a tiny electronic device that packs numerous interconnected electronic components like transistors, resistors, and capacitors onto a single semiconductor crystal, usually silicon.
- **Semiconductor** - It is a weak conductor of electricity, when certain materials are added to them and an electric field is applied, current can start to flow.
- Adding phosphorus to semiconducting materials, such as silicon and germanium, for example, allows the flow of a negative current.
- **Manufacturing facility** - The tiny chips are made in highly specialised manufacturing facilities (known as foundries) through a rigorous process called *wafer fabrication* or *wafer fab*.
- The fabrication requires clean rooms designed to maintain sterile conditions to prevent contamination by air particles.
- **Significance** -
 - Semiconductor chips are the building blocks of modern computation.
 - From smartphones to the vast data centres powering the Internet, from electric cars to cruise missiles, from high-end luxury products to weather-predicting supercomputers — all of them run on these tiny chips.

Quick Facts

SEMICON India 2025

- The Central Government has launched the SEMICON India Programme, implemented through the India Semiconductor Mission (ISM).
- **SEMICON India, 2025** – It showcased India's Rising Role in the Global Semiconductor Ecosystem.
- It brings together global industry leaders, policymakers, academia, and startups to foster investment, dialogue, and strategic partnerships.
- **Organized by** – Jointly by the India Semiconductor Mission (ISM) under the Ministry of Electronics and Information Technology (MeitY) and SEMI, the global semiconductor industry association.
- **Previous editions** of SEMICON India – In 2022 (Bangalore), 2023 (Gandhinagar), 2024 (Greater Noida)

Key Takeaways

- PM Modi to inaugurate SEMICON India 2025: India's biggest Semiconductor & Electronics show to be held in Yashobhoomi, New Delhi from 2-4 September 2025.
- **Theme for SEMICON 2025 is- "Building the Next Semiconductor Powerhouse"**
- Bharat to welcome 33 nations, 50+ global CXOs, 350 exhibitors and 50+ visionary global speakers at SEMICON India 2025.
- **Event to highlight robust local semiconductor ecosystem expansion and industry trends.**
- SEMICON India to address complex challenges of tomorrow while fostering collaboration across the semiconductor ecosystem towards Atmanirbhar Bharat.
- **India's chip market is booming, set to hit \$100-110 Bn by 2030.**
- India Semiconductor Mission (₹76,000 Cr outlay) boosts local manufacturing, design, and talent.
- **Total approved projects under ISM reaches to 10 with cumulative investments of around Rs.1.60 lakh crore in 6 states.**
- On 28th August, CG-Semi launched India's first OSAT Pilot Line in Gujarat to produce the country's first 'Made in India' chin

References

1. [Indian Express | India's first indigenous microprocessor](#)
2. [PIB | SEMICON 2025](#)



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