



Vikram 32-bit Microprocessor and Semicon India 2025

[Source:TH](#)

At **Semicon India 2025**, the Prime Minister of India was presented with the **Made-in-India Vikram 32-bit Launch Vehicle Grade microprocessor**, marking a major milestone in [semiconductor self-reliance](#).

VIKRAM3201

- VIKRAM3201 was developed by [ISRO's Vikram Sarabhai Space Centre](#) and **Semiconductor Laboratory (SCL), Chandigarh**, along with **KALPANA3201**(32-bit microprocessor designed to work with open-source software tools.)
- It is an advanced **version** of the **16-bit VIKRAM1601**, used in **ISRO launch vehicle avionics since 2009**.
- It is designed for **spaceflight applications**, capable of withstanding extreme temperatures of -55°C to 125°C.
 - Initial validation in space of VIKRAM3201 achieved with [SpaDeX Mission \(PSLV-C60 mission\)](#), proving reliability for future space missions.
- It boasts a custom instruction set architecture that is tailored for the **Ada programming language**, which is widely used in safety-critical systems. It is also capable of handling complex tasks like **floating-point computation**.
- It enables **Atmanirbharata in navigation, guidance, and control systems for launch vehicles**.



Semicon India 2025

- **Theme: “Building the Next Semiconductor Powerhouse.”**
- The SEMICON India Programme, implemented through the [India Semiconductor Mission \(ISM\)](#), showcases India’s growing capabilities in **chip design, packaging, and fabrication**.
- It also facilitates global collaborations, research commercialization, skill development, and strengthens India’s position in the **global semiconductor value chain**.

SEMICONDUCTORS

Semiconductors are materials having conductivity between conductors and insulators

EXAMPLES

- » **Pure Elements:** Silicon and Germanium
- » **Compounds:** Gallium Arsenide and Cadmium selenide

SIGNIFICANCE

- » Essential to almost all sectors of the economy – **aerospace, automobiles, communications, clean energy, information technology and medical devices** etc.

SEMICONDUCTORS AND INDIA

- » **India Imports from:** China, Taiwan, USA and Japan
- » **Indian Semiconductor Market:** Expected to reach **USD 55 bn** by 2026

SCHEMES

- » **Production-Linked Incentive (PLI) scheme**
- » **Design Linked Incentive (DLI) Scheme**
- » Scheme for Promotion of Manufacturing of Electronic Components and Semi-conductors (SPECES)

OBJECTIVES

- » Encourage semiconductor and display manufacturing in the country.
- » Nurture >20 domestic companies in semiconductor design
Achieve a turnover of > Rs.1500 crore in next 5 years
- » Manufacture electronics components and semiconductors

INDIA’S SEMICONDUCTOR MISSION (ISM)

VISION

- » Build a **vibrant semiconductor and display design and innovation ecosystem**

LAUNCHED

- » 2021

NODAL MINISTRY

- » Ministry of Electronics and Information Technology (MeitY)

TOTAL FINANCIAL OUTLAY

- » Rs 76,000 crore

COMPONENTS

- » Scheme for setting up of Semiconductor Fabs
- » Scheme for setting up of Display Fabs
- » Scheme for setting up of Compound Semiconductors/Silicon Photonics/Sensors (including MEMS) Fabs/ Discrete Semiconductors Fab and Semiconductor ATMP/OSAT
- » DLI Scheme



Read more: [India’s Semiconductor Ambitions](#)

- [Semiconductor Revolution](#)

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