Investment Memorandum

EXECUTIVE SUMMARY

Company Name: Sensesemi Technologies Pvt. Ltd.	Stage: Series Seed
Industry: Semiconductors | Edge AI | IoT Systems	Founding Year: 2014
Amount Raising: ₹25 Crore	Post-Money Valuation: ₹85 Cr (₹60 Cr pre-money valuation)
Proposed Investment: ₹4 Crore	Ownership Sought: ~ 4.71% (based on ₹4 Cr investment at ₹85 Cr post-money valuation)

Key Recommendation: Invest in a high-conviction semiconductor platform delivering proprietary, AI-ready silicon purpose-built for the next generation of edge devices. In an ecosystem dominated by fragmented IP providers and global incumbents, Sensesemi is pioneering India's integrated chip design approach—fusing analog, compute, and connectivity into a single architecture for medical, industrial, and energy infrastructure applications.

Sensesemi's SenseSoC-200 is a validated, production-ready chip platform featuring ARM MCU/MPU compute cores, BLE 5.x, neuromorphic inference engines, and advanced analog front-ends—designed to serve latency-sensitive and energy-constrained environments. The chip is positioned to power diverse use cases such as wearable diagnostics, smart meters, and intelligent traffic systems, and is already being sampled for pilot deployment with enterprise partners.

The founding team brings over 100 years of combined semiconductor experience across global majors such as NEC, AMD, ARM, Intel, and LSI, and has executed multiple successful silicon tapeouts. With a proven ability to build and scale core IP, ranging from low-power ADCs to edge inference engines—Sensesemi is one of the few Indian semiconductor companies demonstrating true vertical capability.

The ₹25 Cr seed round will enable Sensesemi to move from PoCs to commercial production, scale its customer engagement, and strengthen its IP moat. This ₹4 Cr investment offers an opportunity to back a category-defining player at the intersection of edge AI, power-efficient silicon, and emerging-market infrastructure digitization. With global interest in sovereign chip design at an all-time high, Sensesemi stands out as a credible and scalable platform from India.

COMPANY OVERVIEW

Sensesemi Technologies is a full-stack, fabless semiconductor company based in Bangalore, focused on building ultra-low power, AI-enabled SoCs for edge intelligence. Founded in 2014 by industry veterans with global credentials, the company is among the first in India to develop and validate a complete system-on-

chip platform engineered from the ground up for medical, industrial, and energy infrastructure applications.

At the heart of Sensesemi's innovation is the SenseSoC-200, a highly integrated chip that brings together ARM MCU/MPU compute cores, analog front-ends, Bluetooth Low Energy connectivity, and neuromorphic AI inference engines. This chip is tailored to enable embedded intelligence in edge devices where power, space, and cost constraints rule out traditional solutions. Its ability to handle sensing, computation, wireless communication, and AI inference in a compact, energy-efficient package sets it apart from global incumbents.

All of Sensesemi's IP, including ADCs, inference engines, and analog front-ends—has been developed in-house, allowing the company to control costs, differentiate technically, and adapt quickly to vertical-specific needs. With a research link to Australia and a team spread across key engineering hubs in India, Sensesemi has successfully completed silicon validation and is preparing for early commercial deployments across smart meters, wearables, diagnostics, and industrial controllers.
With the Indian government's semiconductor mission accelerating local demand and investor appetite, and global OEMs seeking specialized, energy-optimized chips, Sensesemi is well positioned to serve both domestic and international markets. Its business model combines IP ownership, focused vertical targeting, and productized silicon, allowing it to capture value across multiple layers of the chip supply chain.
Sensesemi's work sits at the intersection of policy momentum, market demand, and engineering excellence.

TEAM

Sensesemi's leadership is one of its greatest assets. The founding and technical team brings together a rare combination of deep semiconductor expertise, successful product execution, and visionary leadership rooted in global and domestic market understanding.

Vijay Muktamath – Founder & CEO: A serial entrepreneur with over two decades in semiconductors, Vijay has co-founded ventures such as Asarva Chips, where he led the development of India's first 60GHz WiFi chipset. He previously worked at NEC (Australia), LSI, and Bionic Vision Australia, where he helped build diagnostic chips for the visually impaired. A strong believer in India's deep-tech potential, he founded Sensesemi to put Indian silicon on the global innovation map.

Namit Varma – Co-Founder, VP Engineering: Namit has 22+ years in semiconductor engineering, having worked with Texas Instruments, Intel (Xeon processor team), and Achronix (Speedster7t FPGAs). He brings end-to-end silicon leadership across SoC architecture, implementation, packaging, and ecosystem integration. His patents and product track record reflect his deep technical acumen and ability to scale complex teams.

Vishy Mundkur – Chief Architect: With over 35 years in chip design and systems engineering, Vishy has held senior roles at Centillium, Transwitch, and Arcus. He brings unmatched experience in optical and networking chips, and plays a critical role in IP architecture and system integration at Sensesemi.

Dr. Manjunath Kareppagoudar – Technical Director (Analog): A PhD from Oregon State and former analog lead at AMD, ARM, Qualcomm, and Skyworks, Manjunath is a recognized expert in mixed-signal design. He holds two US patents and has multiple tape-outs to his credit, including SAR and pipeline ADCs, neuromorphic circuits, and analog AI accelerators.

Dr. Jayanta Biswas – Senior Principal Engineer (Systems): With 28+ years of systems engineering experience and a PhD from IISc Bangalore, Jayanta has worked on SoCs for digital communications, signal processing, and multicasting. He is currently focused on reinforcement learning-based chip intelligence and embedded AI frameworks.

Together, this leadership team brings the capabilities to architect, design, validate, and commercialize cutting-edge SoCs from the ground up—positioning Sensesemi not just as a fabless company, but as a full-stack silicon innovation house.

PROBLEM STATEMENT

The Infrastructure Intelligence Gap

The next wave of digital transformation is happening not on the cloud, but on the edge of the billions of devices that power healthcare, energy, mobility, and industrial systems. These devices need to sense, compute, communicate, and make decisions autonomously — but most are deployed in resource-constrained environments with tight limits on power, cost, space, and latency.

Yet, today's silicon stack is not built for this reality. High-end processors are too power-hungry. Legacy microcontrollers lack AI inference capability. Discrete analog and wireless components add size, cost, and integration complexity. And global incumbents are not optimizing for India-scale problems like 250M+ smart meters, tier-2 hospital diagnostics, or low-cost automation. There is no chip that brings sensing, compute, analog intelligence, and connectivity together, in a form factor, cost profile, and power envelope suited to emerging markets.

Sensesemi is solving this exact problem: delivering application-specific SoCs that unify analog, RF,

compute, and AI in one low-power platform. Its first chip, the SenseSoC-200, is not just a processor — it's a full-stack edge intelligence engine.

The Status Quo: Fragmentation and Tradeoffs

Across smart infrastructure, OEMs and system integrators rely on a patchwork of components:

- **General-purpose MCUs**: Lack the compute efficiency to run local AI workloads.
- **External analog front ends**: Require manual integration for signal acquisition.
- **Add-on wireless modules**: Increase BOM cost and board complexity.
- **Cloud-based AI**: Unusable for real-time tasks due to latency and power overhead.

This leads to bloated hardware stacks, longer time-to-market, and higher unit economics — defeating the purpose of embedding intelligence on the edge.

For example, in smart meters, utilities want real-time tamper detection and consumption profiling — but today's metering chips lack AI engines and depend on cloud uplinks. In diagnostic devices, startups want real-time ECG/PPG interpretation — but end up stitching together analog ICs, wireless MCUs, and software stacks that don't scale.

The Opportunity: Integrated, Inference-Ready Edge Silicon

The shift to edge AI is undeniable. According to market estimates, the global edge AI chipset market will exceed $22B by 2028. India alone is expected to deploy over 250M smart meters, and the diagnostic medtech sector is expected to grow at a 15% CAGR. However, most existing SoCs in this space fall short on one or more fronts:

- Not optimized for low-latency, always-on AI inference
- Too power-intensive for battery-powered or passive devices
- Lack integration of critical analog/RF functions
- Built for consumer or industrial markets, not Indian infrastructure constraints

Sensesemi's SenseSoC-200 addresses these limitations head-on. With a MCU/MPU core, neuromorphic inference engine, medical-grade analog front end, BLE 5.x, and sub-250mW power profile, it is designed to be the compute backbone for India-scale digitization efforts — from grid edge to clinic edge.

Existing Alternatives

Today, most OEMs choose from the following categories — none of which solve the problem holistically:

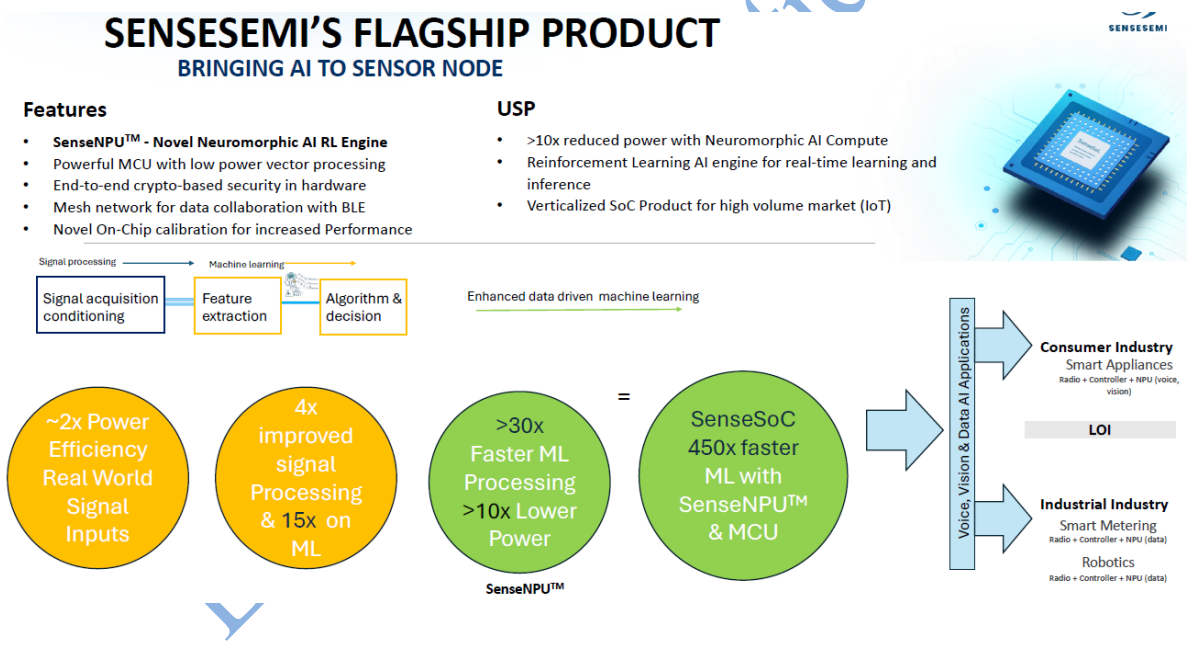
- **Global MCU Platforms (STMicro, NXP, Renesas)**: Strong general-purpose capability, but require external analog interfaces, don't support AI inference natively, and come with higher licensing and integration overhead.
- **Niche AI Chips (Syntiant, Alif Semiconductor)**: Built for low-power inference, but don't include analog sensing or wireless — and are too expensive or over-featured for high-volume utility/health use cases.
- **Indian SoC Startups (Mindgrove, InCore, Netrasemi)**: Focused on either compute or digital logic, with limited verticalization or analog+AI integration.
- **Discrete Build Stacks**: Teams cobble together ADCs, MCUs, BLE modules, and signal processing libraries — resulting in fragmented designs, higher costs, and no scalable intelligence layer.

None of these offer a unified chip that fuses sensing, compute, inference, and connectivity — which is what Sensesemi uniquely delivers.

Why Now?

Four structural shifts make this the right moment to build category-defining edge silicon:

1. **Decentralization of Intelligence**: AI is moving from the cloud to the edge. Use cases like voice triggers, anomaly detection, and gesture recognition require local processing to reduce latency, power, and data costs.
2. **India's National Infrastructure Digitization**: Smart metering, diagnostics, and industrial control are high-priority programs. But existing silicon solutions are imported, expensive, and not optimized for Indian field conditions or pricing models.
3. **Geopolitical Push for Sovereign Silicon**: Global supply chains are de-risking, and India's semiconductor mission has created both capital and demand tailwinds for homegrown IP.
4. **Maturity of AI/ML IP and EDA Tools**: Innovations in analog inference, embedded ML, and system co-design make it technically feasible — and financially viable — to build chips like SenseSoC-200 from the ground up.



Sensesemi sits at the convergence of these shifts, with a product ready to scale, a team with global execution pedigree, and a go-to-market strategy rooted in solving real, at-scale infrastructure problems.

SOLUTION

Product Description: Sensesemi's SenseSoC-200 is a full-stack, AI-enabled system-on-chip designed to bring real-time sensing, processing, and connectivity to cost-sensitive, power-constrained edge environments. Unlike traditional MCUs or AI cores that require multiple discrete components, SenseSoC-200 integrates the entire signal chain from analog data capture to wireless transmission into a single, production-ready platform.

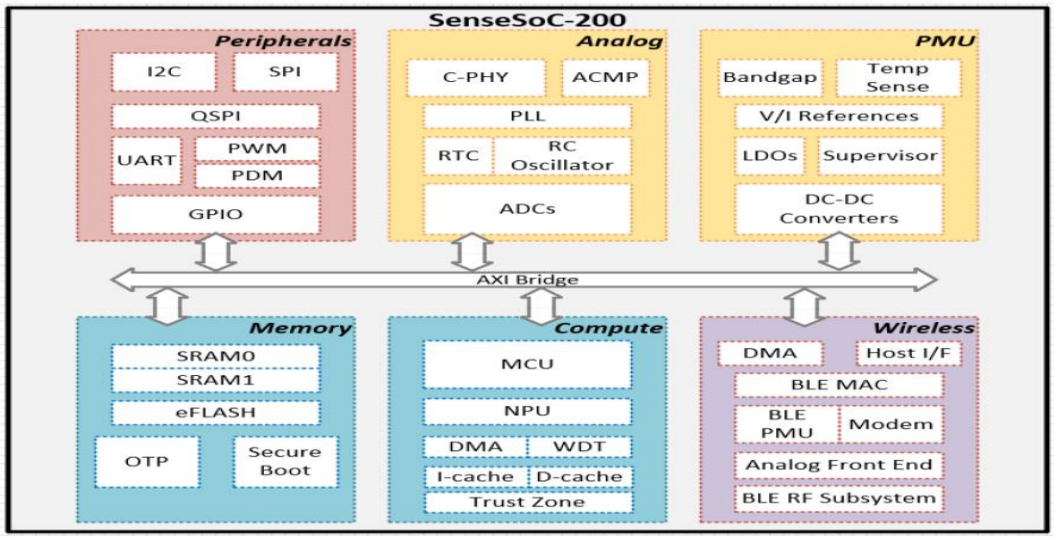
The result is a chip that makes it dramatically simpler, cheaper, and more efficient to build intelligent edge devices for energy, healthcare, and industrial applications — where board space, power budgets, and latency are non-negotiable.

An Integrated Platform for Embedded Intelligence

Core Components:

- **Compute Engine:** ARM MCU/MPU with ARM Helium SIMD for high-performance digital signal processing and local AI inference at up to 250 MHz.
- **Neuromorphic AI Core:** On-chip analog inference engine enabling always-on, ultra-low power machine learning — including voice, vibration, and anomaly detection tasks.
- **Flexible Analog Front-End:** 8-channel, 14-bit ADC supporting simultaneous acquisition of biomedical or electrical signals such as ECG, PPG, or grid data.
- **Wireless Connectivity:** Built-in Bluetooth Low Energy 5.x stack with proprietary RF IP, optimized for reliability and range under low-power budgets.
- **Power Management:** Dual-mode PMU (LDO + DC-DC) allowing operation from a single power supply, with consumption <250 mW in full-function mode.
- **Security & Interface Support:** TRNG, secure boot, AES-128, and support for SPI, I2C, UART, GPIOs, and camera C-PHY interface.

This integration compresses what would normally be a 4–6 chip design into a single silicon unit, reducing BOM costs, shrinking PCB footprint, and accelerating time to market.



Built for Scale, Purpose-Built for Emerging Applications

SenseSoC-200 is architected for use cases where traditional chips fall short:

- Smart Metering: Simultaneous current/voltage acquisition + local inference for tamper detection, usage profiling, and predictive alerts.

- Diagnostic Devices: Real-time ECG/PPG/EEG signal capture with on-device AI for anomaly detection and triage, even in remote clinics.
- Industrial Monitoring: Always-on voice or vibration sensing for machinery diagnostics, powered by ultra-low power AI cores.
- Smart Appliances: Gesture and voice-triggered interfaces that are battery-powered and cloud-independent.

Its ability to operate with minimal external components makes it ideal for compact form factors such as wearables, handhelds, and DIN-rail devices. Applications Use-case is as follows:

High-Performance Compute Subsystem
- AI-MCU running at 250 MHz
- Memory Protection Unit (MPU)
- Trust Zone for ARMv8.1-M
- Digital Signal Processor (DSP)

Memory Subsystem
- OTP for configuration management
- Flash for code storage
- Secure boot
- QSPI for external flash access

Bluetooth Subsystem
- Integrated Baseband Controller
- Low noise RF baseband with 10dBm output

Peripherals Subsystem (low-power & configurable)
- 2x UART
- 2x I2C
- 2x SPI
- QSPI
- 12x GPIO
- RTC
- 8x PWM & Timers

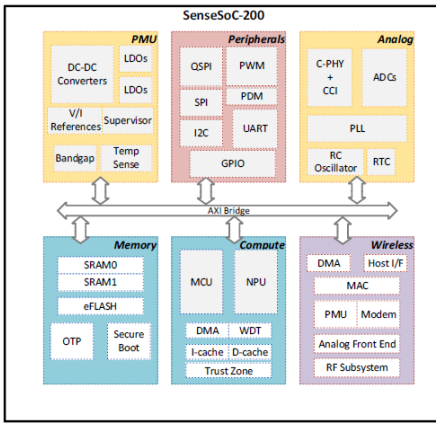
Analog Subsystem
- 8-channel ADC with simultaneous acquisition for 3-channels
- Frequency synthesizer with 1 – 50MHz XO support
- Supervisory circuits
- C-PHY for camera input feed (1x lane)

PMU Subsystem
- Single supply operation
- Configurable DC-DC converters & LDOs
- Built in temperature sensor & alarm
- Versatile power operating modes (PowerWise™)

Operating Conditions
- Input supply range from 1.7V – 3.6V
- Ambient temperature from -40°C to 85°C

Applications
- Smart Meters
- Smart Industrial Lighting
- Robotics
- Connected & Smart homes
- Fitness trackers / Bands

Package Options
- 7 mm x 7 mm, 60-pin QFN



What SenseSoC-200 Replaces

The majority of edge device designs today require:

- A microcontroller (for compute)
- A signal conditioning and ADC chip (for analog input)
- A BLE module (for wireless)
- A power management IC
- An external AI accelerator (for inference)
- Discrete security modules

Sensesemi collapses this complexity into a **single SoC**, drastically reducing design time, validation effort, and failure points — while delivering improved performance-per-watt.

Competitive Landscape & Advantages

Versus Global MCU Platforms (STMicro, NXP): SenseSoC integrates analog, AI, and RF subsystems natively, enabling faster time-to-market, smaller form factors, and localized performance optimization.

Versus AI-Only Chips (Syntiant, Alif): Unlike inference-focused chips that rely on external sensing and control logic, SenseSoC is full-stack, from signal capture to intelligence to communication.

Versus Local Startups (Mindgrove, Netrasemi): While local peers target specific IP blocks (RISC-V cores, digital accelerators), Sensesemi delivers a turnkey SoC solution with validated analog and wireless IP, and a focus on real-world productization.

Advantages at a Glance:

- All-in-One Chip: Compute, sensing, AI, and wireless in one silicon unit
- Ultra Low Power: Operates under 250 mW; supports battery and passive systems
- Full In-House IP: Custom ADCs, PMUs, and BLE stacks developed internally
- Vertical Integration: Medical, energy, and industrial use cases addressed natively
- Scalable Architecture: Designed to power 10,000,000+ unit volumes with <$3 chip cost

SenseSoC-200 isn't competing on just features — it's competing on integration, efficiency, and real-world deployability. It is a platform built not in abstraction, but in response to what the next billion connected devices will need.

MARKET OPPORTUNITY

The world is moving to the edge — and India is emerging as a strategic demand center for energy-efficient, AI-capable, and cost-effective semiconductors.

From smart grids and healthcare diagnostics to industrial automation and consumer devices, the need for localized edge intelligence is growing rapidly. This transformation requires silicon that is optimized not for cloud-centric use cases, but for **low-latency, low-power, and high-volume edge environments**.

Types Of AI Chipset & Their Applications

Types Of AI Chipset & Their Applications	Description	Applications
GPU (Graphics Processing Unit)	High-performance, parallel processing for machine learning and deep learning	Computer Vision, Natural Language Processing, Autonomous Vehicles
TPU (Tensor Processing Unit)	Custom-built for machine learning and deep learning, optimised for TensorFlow	Cloud-based AI, Data Centers, High-Performance Computing
ASIC (Application-Specific Integrated Circuit)	Custom-designed for specific AI applications, optimised for performance and power efficiency	Edge AI, IoT Devices, Autonomous Vehicles
FPGA (Field-Programmable Gate Array)	Reconfigurable hardware for adaptive AI applications, optimised for flexibility and performance	Edge AI, IoT Devices, Aerospace and Defense
Neuromorphic Processor	Inspired by the human brain, mimics neural networks for efficient AI processing	Edge AI, Robotics, Autonomous Systems
AI Accelerator	Specialised hardware for accelerating AI workloads, optimised for performance and power efficiency	Data Centers, Cloud Computing, High-Performance Computing
Edge AI Chip	Optimised for low-power, high-performance AI processing at the edge	Smart Home Devices, IoT Devices, Autonomous Vehicles
Neural Network Processor	Designed for efficient processing of neural networks, optimised for performance and power efficiency	Computer Vision, Natural Language Processing, Robotics

Sensesemi sits at the heart of this shift — offering full-stack silicon for mission-critical applications in smart infrastructure.

According to industry data, the **global market for AI edge chips** is expected to grow significantly in the coming years, powered by the increasing adoption of intelligent endpoints across industrial, energy, and medical sectors.

Sensesemi's flagship SoC—SenseSoC-200—is targeted at three high-impact verticals where silicon demand is both large and underserved:

- **Smart Metering**: India's government-backed initiative aims to install over **250 million smart meters** by 2032, translating to a market size of more than **₹23,000 Cr ($2.8B)**. This represents one of the largest domestic silicon opportunities globally, with increasing demand for real-time analytics and connectivity on the device itself.

Meter Type	Smart Consumer Metering	DT Metering
Sanctioned	222.35M	5.3M
Awarded	138.02M	4.56M
Deployed by March 2025	10.31%	8.60%
Monthly Deployment Rate	0.13-0.20%	0.18-0.25%
ETA*	7 years	8 years

Smart Consumer Metering

- RDSS launched July 2021. aimed to install 250M smart meters by March 2025
- 10% deployment achieved, but picking up pace
- ETA assumes acceleration of deployment 50% per year
- SenseSoC-200 production in 2027. 135M units deployment from 2028
- Market size expected to reach $2.8B by 2032

DT Metering

- Smaller volume, requires better solutions, AI/ML major requirement
- 8.5% deployment achieved
- ETA assumes acceleration of deployment 50% per year
- SenseSoC-200 production in 2027. 2.7M units deployment from 2028

- **Connected Health & Diagnostics**: With rising interest in decentralized care, there is growing need for **wearable and portable health diagnostics** that can support continuous monitoring of vitals such as ECG, glucose, and oxygen levels. These devices require chips that integrate analog front-ends, AI inference, and wireless communication in a compact, energy-efficient form.

- **Industrial & City Infrastructure**: Indian cities are digitizing systems such as traffic control, waste monitoring, and industrial automation. These use cases require **on-device processing**, **ultra-low power operation**, and **always-on sensing** — domains where SenseSoC-200 is already validated.

A Market-Led Product, Built Ground-Up for India

What sets Sensesemi apart is its alignment with India's unique infrastructure needs:

- Low-power performance in high-temperature, constrained environments
- Sub-$2-$4 cost targets for mass deployment
- In-house IP stack for analog, compute, AI, and connectivity

This makes the company not only a viable alternative to global chipmakers like STMicro, NXP, or Alif, but a **strategic enabler for India's semiconductor mission** and related digital public infrastructure rollouts.

PRODUCT & TECHNOLOGY

Product Overview

SenseSoC-200 is a highly integrated, AI-enabled SoC (System-on-Chip) built to power energy-efficient edge devices across industrial, medical, and utility sectors. Unlike traditional MCU solutions that require separate chips for sensing, compute, communication, and inference, Sensesemi delivers all core capabilities on a single, low-power die.

The product is vertically integrated—engineered in-house across analog, digital, and AI IP blocks—and built specifically for high-volume, cost-sensitive applications in emerging markets. SenseSoC-200 supports on-device AI inference, BLE connectivity, medical-grade sensing, and predictive computing in a compact, ultra-efficient form factor.

Platform Architecture

Subsystem	Functionality
Compute Core	ARM Cortex-M55 @ 250 MHz with Helium (SIMD) extensions for DSP and AI workloads
Analog Front-End (AFE)	8-channel, 14-bit ADC + ECG/PPG/Glucose signal acquisition
Wireless Interface	Bluetooth Low Energy 5.x with integrated radio stack
AI Inference Engine	Neuromorphic analog inference block for always-on voice and pattern detection
Power Management	Multi-mode regulators (LDO & DC-DC), dynamic voltage scaling
High-Speed Interfaces	C-PHY for image sensors, 3GSPS SerDes for video/sensor data
Security & Packaging	On-die security support + compact single-package footprint

Technology Stack

Layer	Components
Hardware	SenseSoC-200 silicon (custom ARM, ADC, BLE, AI Engine)
Firmware & Drivers	In-house libraries for sensor control, wireless stack, AI execution
Development Tools	SDK + simulation environment for custom applications
Manufacturing	55nm TSMC process node (validated); packaging and test pipelines established

AI Roadmap & Embedded Intelligence

AI Use Case	Status	Description
Keyword Spotting (Voice UI)	Live	Wake-word recognition and audio triggers at sub-mW power
Vital Signal Classification	Live (pilot deployments)	ECG waveform pattern detection for wearable diagnostics
Predictive Load Monitoring	In progress	Anomaly detection in smart meters and industrial controllers
Gesture Recognition	In development	On-device AI for contactless user input in constrained devices

Enterprise-Grade Design & Market Fit

Design Criteria	Sensesemi Delivery
Power Efficiency	200–250 mW under load, <5 mW idle — designed for always-on edge use cases
Cost Optimization	Total BOM under ₹100 per unit; chip target price ~$1.20–1.50
Local Environment Fit	Rugged, analog-heavy architecture tuned for Indian grids and sensor variability
Vertical Versatility	Validated for medical, utility, industrial, and consumer electronics
Manufacturing Readiness	Silicon validated, packaged, and undergoing customer PoC deployment

Go-To-Market Strategy

Sensesemi's GTM strategy is focused on **vertical specialization**, **deep enterprise engagement**, and **strategic partnerships** — reflecting the long sales cycles and high-touch nature of semiconductor and system-level adoption. The company is targeting global and domestic OEMs in smart metering, healthcare diagnostics, and industrial automation — markets where integration, reliability, and total cost of ownership are key.

Ideal Customer Profile (ICP)

- OEMs and ODMs building **smart edge devices**
- System integrators in **utilities, medical, and industrial** verticals
- Customers requiring **ultra-low power**, analog-rich, AI-capable silicon
- Mid- to large-size manufacturing partners with volumes of **100K+ units/year**
- B2B enterprises seeking **custom SoC integration** or analog/AI IP licensing

Go-To-Market Motion

Channel	Execution Strategy
Founder-Led Sales	Direct engagement by CEO and senior architects to large Indian OEMs and PoC clients
Reference Deployments	Pilots in smart metering, diagnostics, and industrial controllers to demonstrate value
Strategic Co-Development	Joint design discussions with select partners to shape derivative IP and chip variants
Analog & AI IP Licensing	Parallel monetization via licensing of subsystems like AFE, ADC, and inference engines
Government & Incubation	Leverage Indian Semiconductor Mission and DPIIT programs for procurement & exposure
University & Research Ties	R&D collaborations with Australian and Indian institutions to seed new use cases

Geographic Strategy

Region	Focus
India	Smart grid (DISCOMs), diagnostics (wearables, ECG), and Make-in-India IoT
APAC & MENA	Medical-grade consumer electronics and industrial automation
Australia	Academic & translational research partnerships (legacy from BVA network)
Europe (2025+)	Roadmap for IP licensing and white-label SoC partnerships

Monetization Alignment

Customer Path	Commercial Strategy
Pilot Deployments (0–6 mo.)	Free or subsidized silicon & reference boards for field testing
Low-Volume Production	Per-unit silicon sales (₹80–₹130/unit), basic SDK
High-Volume OEM	Tiered pricing + design customization + direct integration support
IP Licensing	Annual fees or royalty model for analog blocks & AI inference IP

Key Metrics & Traction Anchors

- **Pilot-ready** chip with multiple PoCs in smart metering and diagnostics
- **In-house IP portfolio** with cost and time-to-market advantages
- **Silicon validation completed**, and early manufacturing in place
- Long-term upside from **repeat deployments**, embedded IP licensing, and **derivative chip variants**

Deal Details

Round Construct

Sensesemi Technologies is raising ₹25 Cr in a **Seed round** at a **₹60 Cr pre-money valuation** (₹85 Cr post-money). The round is anchored by lead by Piper Serica, and includes early participation from angels and domain-aligned seed fund. The **LV Angel Fund** is proposing a **₹4 Cr investment**, which corresponds to an estimated **~4.71% ownership stake** at the post-money valuation.

Proceeds from the round will be deployed across:

- Scaling **commercial manufacturing** for the SenseSoC-200 platform
- Expanding **customer acquisition efforts** and technical pre-sales support
- Enhancing the **IP library** for analog, AI, and RF components
- Driving **international GTM partnerships** across medical, industrial, and utility sectors

The company is also preparing for a **$10M Series A** in 2025, which will enable global expansion and next-generation chip R&D.

Risks & Challenges

- **Pre-Revenue Stage:** As of mid-2025, Sensesemi remains pre-revenue, with the SenseSoC-200 platform currently in sampling and early pilot deployments. Commercial revenue is expected to begin in FY26 following volume manufacturing. While the company has demonstrated strong technical validation and product readiness, market conversion risk remains until anchor customers transition from PoC to scaled orders.
- **Hardware Development Cycles:** Unlike SaaS, semiconductor design involves long development and validation cycles. Tape-outs, foundry engagement, and post-silicon bring-up require capital, time, and precise execution. That said, the team has already completed silicon validation and is entering pre-commercial scale with tested chips in hand — mitigating major timeline uncertainties.
- **Enterprise GTM Ramp:** Target segments like medical, smart metering, and industrial controls often involve long sales cycles and government-linked procurement. Sensesemi is building this motion via domain partnerships and early PoCs. However, timelines for bulk adoption will depend on partner onboarding and regulatory/infra timelines, particularly in India's energy sector.
- **Capital Intensity of Scale:** Volume chip production, packaging, and customer support at scale will require continued capital infusion. While the current ₹25 Cr seed round enables GTM and initial production, the planned $10M Series A in 2025 will be crucial to sustain supply chain, talent expansion, and second-gen product development.
- **Deep-Tech IP Risk:** Sensesemi is vertically integrated with all IP developed in-house — including ADCs, BLE stack, analog inference engines, and medical front ends. While this is a strategic moat, it also carries execution risk if roadmap components slip or if licensing becomes necessary for specific markets or certifications.

Exit Potential

Strategic Acquirer Fit

Sensesemi's positioning at the intersection of **edge AI, analog-rich SoCs**, and **vertical system integration** makes it a strong candidate for acquisition by multiple classes of buyers:

- **Global Semiconductor Majors** Companies like STMicroelectronics, NXP, Texas Instruments, and Infineon actively acquire early-stage chip firms to access differentiated IP in analog, RF, or edge AI inference — especially as demand for embedded intelligence surges across IoT, medical, and energy markets.
- **AI Accelerator & Edge Compute Players:** Firms like **SiMa.ai, Hailo, Ambiq**, and **GreenWaves Technologies** are consolidating inference-at-the-edge stacks and increasingly seeking ultra-low power sensor fusion and neuromorphic IP to expand product breadth.
- **Medical & Industrial Device OEMs:** Companies like **GE Healthcare**, **Medtronic**, **Siemens**, and **ABB** regularly acquire chip/IP startups to internalize sensing, AI, and wireless functions for embedded systems, especially for regulated, high-stakes environments.
- **Indian Strategic & Sovereign Platforms**: With India's Semiconductor Mission and state-led initiatives (e.g., TATA Elxsi, SPECS-linked OEMs), Sensesemi stands to attract interest from **national champions or defense-linked entities** investing in indigenous IP.

Business Maturity Signals

- **Silicon Validated**: Tape-out and silicon bring-up completed for SenseSoC-200
- **PoCs in Progress**: Smart metering, diagnostics, and industrial applications underway
- **In-House IP Stack**: Proprietary analog, AI, and BLE IP — critical for vertical integration
- **Ready for Scale**: Volume production and first commercial shipments expected FY26
- **Patent Assets**: Multiple IP blocks in analog front-end, inference engine, and signal processing

These markers suggest that Sensesemi is already crossing the threshold from R&D to commercial readiness — increasing visibility among ecosystem partners and acquirers.

Comparable Transactions

Company	Acquirer / Investor	Category	Comment
Ineda Systems	Renesas Electronics (2018)	Low-power SoCs	Acquired for talent & design in wearables and automotive AI
Habana Labs	Intel (2019, $2B)	AI inference chips	Specialized in cloud/edge AI accelerators
SiFive (ongoing)	Intel (Stake in 2022, $2B rumored)	RISC-V & SoC design	Focus on customizable chiplets and SoC IP
Alphion (India)	Acquired by Huawei	Optical SoCs	Undisclosed value; used for broadband integration
Mindgrove (India)	Grant-backed, early partnerships	IoT SoC (RISC-V)	No exit yet, but growing attention from ecosystem buyers

IP Monetization Optionality

In addition to a full acquisition, Sensesemi's unique IP blocks — including the Analog Inference Engine, Medical AFE, and BLE Stack — offer standalone licensing opportunities. These subsystems could be monetized independently or serve as wedge IP in future M&A discussions.

Investment Thesis

Sensesemi is not just building silicon — it's building India's first vertically integrated platform for **AI-native, ultra-low-power edge computing** in a world where demand for intelligent infrastructure is exploding and global supply chains are seeking local, strategic alternatives.

Whereas most SoC companies are piecing together third-party IP or chasing hyperscale compute, **Sensesemi is purpose-building a platform** for the real next frontier: billions of embedded, power-constrained devices in healthcare, utilities, and industrial automation — where latency, energy efficiency, and cost matter most.

Why Invest

- **National Relevance and Policy Tailwinds:** With India's ₹76,000 Cr semiconductor mission, a push for design-linked incentives (DLI), and national focus on energy, AI, and electronics sovereignty, Sensesemi stands to benefit not just from commercial demand but also from **governmental and strategic capital**. It aligns with core policy priorities around domestic IP, import substitution, and AI enablement in public infrastructure.
- **Structural Demand, Unsolved by Incumbents:** Global majors like STMicro, NXP, and Alif dominate the edge silicon space, but none offer a fully integrated, cost-efficient SoC with AI, BLE, and medical-grade analog IP in a single die. For markets like India or MENA, where smart meters, wearables, and diagnostic devices are expected to scale in the hundreds of millions, existing solutions are either over-engineered or not localized. Sensesemi is solving a deeply technical problem with platform-level thinking, fusing analog, compute, wireless, and AI at the silicon level.
- **Production-Ready Silicon with Validated IP Stack:** This is not a paperware story. The **SenseSoC-200 is a working, validated chip** with ARM MCU/MPU + Helium DSP, BLE 5.x, 8-channel 14-bit ADC, neuromorphic inference engine, and a medical-grade analog front-end. The chip is already being **sampled for pilots across smart meters, predictive health, and industrial control systems**. The IP stack — from ADCs to analog AI — is fully developed in-house.
- **Strategic Vertical Focus in Massive, Under-Penetrated Markets:** From India's 250M+ smart meter mandate to the rising demand for low-cost diagnostic wearables and voice-enabled devices in Tier 2/3 cities, the **TAM is enormous, under-digitized, and underserved** by current silicon providers. Sensesemi is not chasing general-purpose compute — it's going deep on real, repeatable use cases with high volume and high national strategic relevance.
- **World-Class Deep Tech Team with Proven Tapeouts:** The leadership team brings over **100+ years of semiconductor experience** from NEC, Intel, ARM, AMD, TI, LSI, Qualcomm, and Bionic Vision Australia. They've built chips before, taken them to market, and hold multiple US patents. This is not a team learning on the job — they've executed before, and are doing it again with clear technical clarity.
- **Attractive Entry Point, Strong IP Leverage:** At a **₹60 Cr pre-money valuation**, this round offers entry into a **functionally complete semiconductor platform** with real pilots, validated IP, and production-ready silicon, something that would typically demand 4–5x this valuation elsewhere. The business model blends **chip sales with long-tail IP monetization**, allowing for high-margin leverage once adoption begins.

Our View

Sensesemi is executing one of the hardest things in Indian deep tech: full-stack chip design — and doing it with capital discipline, a clear roadmap, and real-world PoCs in motion.

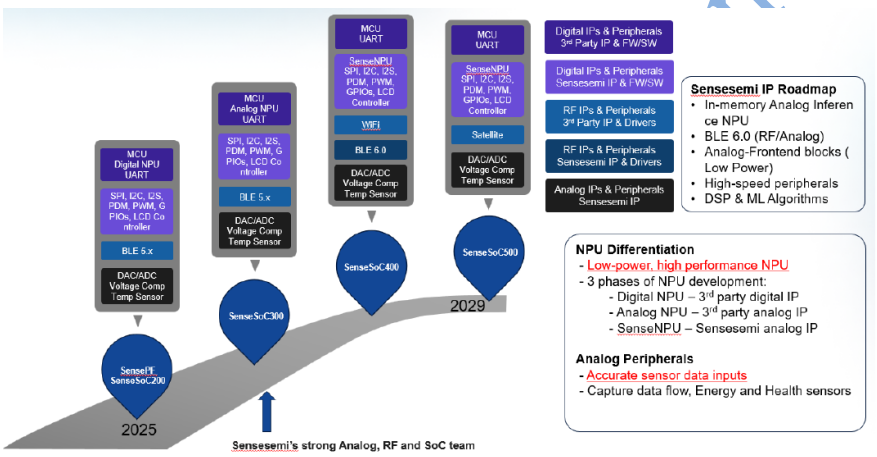
This is **not a blueprint-stage bet** — it's a **validated platform with national strategic relevance, commercial pilots underway, and real silicon in hand.**

Much like SaaS in 2013 or fintech in 2017, **India's semiconductor wave is just beginning**, and Sensesemi is already ahead of the curve.

The path from here is about **channel partnerships, vertical execution, and GTM scaling** — not fundamental technical risk. We believe this investment has the potential to become a cornerstone deep tech outcome for India, delivering value not just as a venture win but as strategic infrastructure for the nation's digital future.

Appendix

Roadmap:



Use Case Grid

Biometric Identification & Approval:

- Biometric Identification involves analysis of the face, matching with stored data, approving or denying the access and finally logging the data for daily/weekly analysis
- Signal processing part (MCU + DSP) involves sensor data collection (LED intensity, Ambient light, Temperature etc) and provides PWM control signals for the LED Illumination array
- Edge inferencing part (NPU) processes the Camera image coming through the C-PHY/CCI interface, does feature extraction, matches with stored templates and provides a match criteria for approval or denial
- The results of the biometric analysis are provided to the display console for the operator (Security) to do final approval or additional checks
- Once approved, the access pass is provided to the visitor through the Bluetooth link

Intelligent Traffic Management Systems (ITMS):

- Traffic management with dynamic controls based on traffic density patterns helps to congest major arterial roads instead of the traditional timer based systems
- Here again, the Signal processing (MCU + DSP) part takes in sensor data (LED intensity, Ambient light, Temperature etc), timer or activity based or manual control input and provides PWM control signals for the Traffic Light LEDs
- Edge inferencing part (NPU) processes Traffic camera image through the C-PHY/CCI interface, does object detection, calculates traffic density in each road leading to the junction and provides data on the density to the MCU to compute the signal status
- Manual input from the traffic cop, with the security layer approval will be used to override the decisions for priority (ambulance)
- The analytics data on the traffic lights position (time interval of red/green) can be sent out through the Bluetooth link for network wide traffic analysis in the main control room

Automated Inline Inspection & Reporting:

- For quality controls and reduction in human error due to fatigue, automated inline inspection of components & possible defects or anomalies are reported using ML approaches
- In the Industrial setup, the Signal processing (MCU + DSP) part takes in sensor data (Speed, Vibration, Position, Intrusion sensors), and runs the algorithm that for speed control of the conveyor line based on the component manufactured
- In parallel, the Edge inferencing part (NPU) processes Inspection camera images (multiple view points) through the C-PHY/CCI interface, performs pattern matching to detect defects, marks out the regions of interest and sends out the data to the MCU
- The annotated images are sent over the Bluetooth link, connected to the BLE Mesh network which transfers the data on the operator station for further analysis based on the machine analysis performed
- Additionally, the anomaly detection can be used to stop the inspection line in case of gross defects or malfunctions faster than human intervention

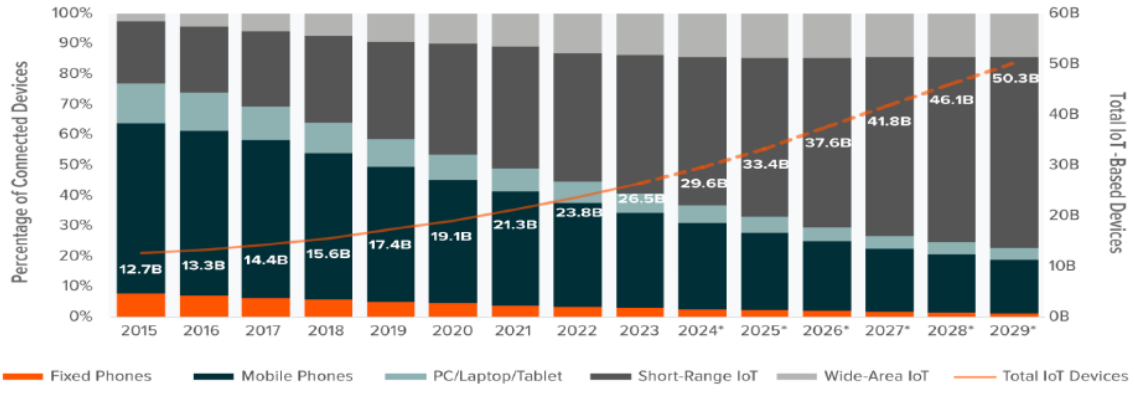
Healthcare & Remote diagno:

- In healthcare, the ability to measure multiple biopotentials, extract body vital parameters as well as ML based diagnostics as in the case of heart arrythmia is possible with this chip
- The Signal processing (MCU + DSP) part here analyses sensor data for signal conditioning (ECG, EEG, PPG, Bio-impedance, Blood glucose), and runs the algorithm that extraction vital data such as Heart rate, Blood sugar, Hydration levels, Heart function etc
- In conjunction, the Edge inferencing part (NPU) processes either Camera real-time data for facial recognition (screen for eye diseases, signs of stroke etc) or ECG data for arrythmia. The regions of interest are highlighted and data sent to the MCU
- The vitals as well as annotated data are sent over the Bluetooth link, vitals to the patient's phone and the annotated data to the cloud infrastructure for telemedicine operation. Vitals data is also available on the LCD display
- These provisioning helps to bring portable medical diagnostic devices to the rural areas, and through telemedicine provide early detection & intervention at lower costs

Global Edge Market:

GLOBAL IOT DEVICES ARE EXPECTED TO APPROACH 30 BILLION IN 2024 AND TOP 50 BILLION IN 2029

Sources: Global X ETFs with information derived from: Ericsson. (n.d). Ericsson Mobility Visualizer. Accessed on July 1, 2024.



*Forecast.
Note: Connected devices classified within IoT include items such as wearables, machines, sensors, connected cars, and more. These devices are further classified into Short-Range IoT and Wide-Area IoT based on connectivity range.

Source: Ericsson Mobility