

# Global SOC IoT Innovation Trends

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## Abstracts

The semiconductor industry is constantly confronted by design and device-integration challenges, since IoT applications and consumers demand small, portable, and multi-functional electronics. With hardware designing constantly evolving, a new class of designers is stepping up to take on these challenges, using various silicon implementations. The advantages of system-on-a-chip (SoC) over other silicon implementations make it the most suitable solution for intelligent edge computing in IoT applications.

The rise of IoT products and platforms has led to a number of challenges that need to be addressed to explore the full potential of IoT systems and their related emerging applications. This report includes a comprehensive analysis of the SoC-IoT space, highlighting the major trends and opportunities across the ecosystem.

### Competitive analysis

This section includes a list of the emerging companies to look out for. More than 40 companies have been reported on, which are focused on various technological aspects of the SoC-IoT ecosystem, including power management, memory-related solutions, design tools, RISC-V architecture, etc. The companies are profiled in detail to answer the questions pertaining to different factors, including product offerings and technology, key personnel, partnerships, customers, patenting activities, funding details, and the future outlook. Mid-stage companies that can be potential targets have also been included.

Some of the companies covered include Ambiq Micro, PLSense, Wiliot, PSikick, Crossbar, The Ferroelectric Memory Company (FMC), Baum, GreenWaves Technologies, SiFive, Ineda Systems, Eta Compute, Morse Micro, etc.

## Acquisition trends

An assessment of acquisition trends since 2014 provides insights into the inorganic growth routes adopted by established companies for differentiating their products, and coping with competition. The key technologies acquired through these deals are related to mixed-signal solutions, always-on communication, design capabilities, and memory technologies. Various strategic drivers related to the transactions are also included in the report. The acquisition trends suggest that mid-stage companies are also being considered as potential targets by established players.

### Key insights:

The SoC-IoT ecosystem has shifted the industry to a collaborative structure, wherein chip manufacturers and IP vendors work together for meeting design requirements, including integration of software-hardware, analog-digital, and IP block reuse.

Key players can partner with start-ups that offer critical innovation by providing solutions to the challenges in the market.

Custom SoCs are an emerging trend for achieving tailor-made solutions utilizing AI, ML, etc., that can handle massive computing requirements. RISC-V architecture is one such viable, open-source option that is gaining recognition.

With the introduction of eFPGA, it is now possible to integrate SoC and FPGA into a single design, making SoC configurable and reconfigurable to meet the requirements of the future IoT market.

Edge computing and analytics on the edge are driving the market for on-chip ML and AI solutions.

### Key questions addressed in the report:

What are the drivers, challenges and design requirements related to SoC-IoT implementation?

What are the major trends related to industry adoption and techniques for future integration?

Who are the innovative and disruptive entities (start-ups and mid-stage companies) that can be considered as potential targets in the SoC-IoT market?

What are the acquisition trends in the SoC-IoT space since 2014?

What are the opportunities for industry players in the SoC-IoT ecosystem?

## Contents

### **1 INTRODUCTION**

- 1.1 IoT ecosystem
- 1.2 Opportunities for semiconductor industry with advancements in IoT
  - 1.2.1 Role of semiconductor Industry
  - 1.2.2 Silicon implementation for IoT Devices

### **2 CHALLENGES IN IMPLEMENTATION OF SOC-IOT**

### **3 SOC-IOT DESIGN REQUIREMENTS**

- 3.1 Analog integration and IP-Reuse
- 3.2 ASIC capability
- 3.3 Complex clock
- 3.4 Verification

### **4 TRENDS IN SOC-IOT SPACE**

- 4.1 Wireless interoperability
- 4.2 Analog IP integration and reuse
- 4.3 Power requirements
- 4.4 Memories and sensors

### **5 COMPETITIVE ANALYSIS**

- 5.1 Power management solution providers
  - 5.1.1 Ambiq Micro
  - 5.1.2 PLSense
  - 5.1.3 Wiliot
  - 5.1.4 Psikick
- 5.2 Memory-related solution providers
  - 5.2.1 Crossbar
  - 5.2.2 The Ferroelectric Memory Company (FMC)
  - 5.2.3 sureCore
- 5.3 Design tools
  - 5.3.1 Baum
- 5.4 RISC-V Architecture

5.4.1 GreenWaves Technologies

5.4.2 SiFive

5.5 Other Startups

5.6 Other Entities

## **6 ACQUISITION TRENDS**

6.1 Acquisition timeline and deal count

6.2 Deal characteristics and its strategic drivers

6.3 Technology drivers of the deals

6.4 Details of the M&A transactions

## **7 KEY OPPORTUNITIES IN THE SOC-IOT ECOSYSTEM**

7.1 Key takeaways

7.2 Recommendations

## **8 REFERENCES**

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