



**20
25** | **COMPANY
OF THE YEAR**
Driving impact across the customer value chain

*RECOGNIZED FOR BEST PRACTICES IN THE
GLOBAL SEMICONDUCTOR SOLUTIONS FOR
HEALTHCARE INDUSTRY*

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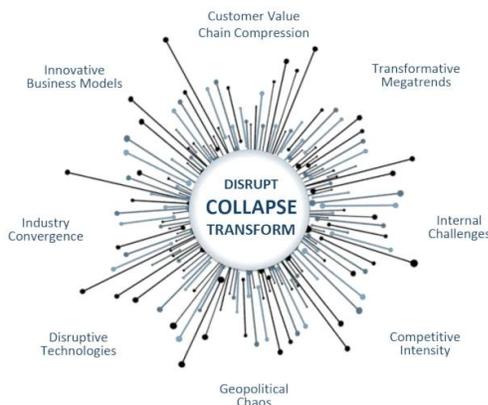
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Best Practices Criteria for World-class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each recognition category before determining the final recognition recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Ambiq excels in many of the criteria in the global semiconductor solutions for healthcare space.

RECOGNITION CRITERIA	
<i>Visionary Innovation & Performance</i>	<i>Customer Impact</i>
Addressing Unmet Needs	Price/Performance Value
Visionary Scenarios Through Megatrends	Customer Purchase Experience
Leadership Focus	Customer Ownership Experience
Best Practices Implementation	Customer Service Experience
Financial Performance	Brand Equity

The Strategic Imperative: 8 Factors Creating Pressure on Growth



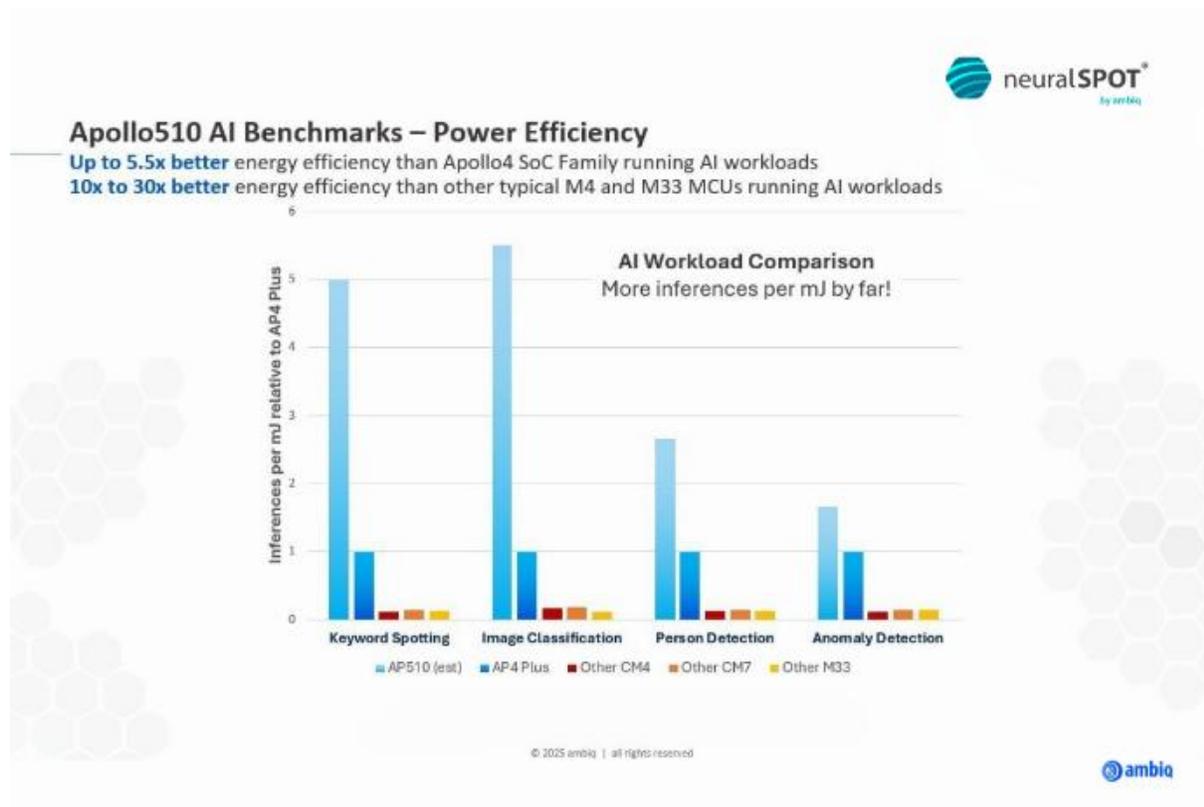
- Innovative Business Models:** A new revenue model that defines how a company creates and capitalizes economic value, typically impacting its value proposition, product offering, operational strategies, and brand positioning
- Customer Value Chain Compression:** Customer value chain compression as a result of advanced technologies, internet platforms, and other direct-to-consumer models that enables the reduction of friction and the number of steps in customer journeys
- Transformative Megatrends:** Global forces that define the future world with their far-reaching impact on business, societies, economies, cultures, and personal lives
- Disruptive Technologies:** New, disruptive technologies that are displacing the old, and significantly altering the way consumers, industries, or businesses operate
- Internal Challenges:** The internal organizational behaviors that prevent a company from making required changes

- **Competitive Intensity:** A new wave of competition from start-ups and digital business models that challenge the standing conventions of the past, compelling established industries to re-think their competitive stance
- **Geopolitical Chaos:** Chaos and disorder arising from political discord, natural calamities, pandemics, and social unrest that impact global trade, collaboration, and business security
- **Industry Convergence:** Collaboration between previously disparate industries to deliver on whitespace cross-industry growth opportunities

Power efficient solutions

Ambiq is a global provider of ultra-low-power semiconductors and solutions enabling edge AI. Ambiq sells its products to various industries, including personal devices and digital health solutions. Ambiq's products can be applied in numerous applications such as AI, gaming, hearables, industrial edge, smart homes and buildings, remote sensors, and wearables.

Ambiq offers a broad range of products, including SoCs (Systems-on-a-Chip) and MCUs (Microcontroller Units). There are five generations of their Apollo SoCs with variations that feature connectivity options such as Bluetooth Low Energy or Matter/Thread support, providing designers flexibility in selecting the right semiconductor for their project needs. The Apollo510 MCU, Ambiq's most advanced chip to date, boasts energy efficiency at 300x more inference throughput per joule and can be employed to deploy artificial intelligence in applications such as speech, vision, health, and industrial AI models. It features a 2.5D GPU with vector graphics, superior energy efficiency, an Arm Cortex-M55 CPU with Helium technology for processing speeds up to 250MHz, and robust security using secureSPOT, Arm's TrustZone technology with physical unclonable function (PUF), and tamper-resistant OTP. The Apollo510 was awarded Best Hardware at the 2024 Embedded World and the 2025 IoT Semiconductor Solution of the Year by IoT Breakthrough.



Source: Ambiq

Ambiq's Real-Time Clock (RTC), the Artasie series, provides industry-leading ultra-low power management, eliminating the need for the main processor to power down the device to conserve energy.

Subthreshold Power Optimized Technology (SPOT®) is a distinguished technology of the company that can be applied in various applications. SPOT is Ambiq’s proprietary technology platform that enables SoCs and MCUs to deliver powerful processing and energy-saving capabilities. Ambiq’s key competitive advantage lies in its ultra-low-power semiconductors built on its patented SPOT platform, which allows devices to operate on a single charge for extended periods.

Ambiq also offers supporting technologies such as blueSPOT® for Bluetooth Low Energy (BLE) solutions; graphiqSPOT® for crisp and vibrant graphics; harvestKIT™, an energy harvesting reference design platform; heartKIT®, an AI reference model for ECG monitoring development; neuralSPOT AI Development Kit (ADK); secureSPOT®, a suite of security features; turboSPOT®, an ultra-low power dynamic performance scaling technology; and Voice-on-SPOT®, an always-on and always-listening voice-to-cloud solution.

Enabling Edge AI

AI development and adoption are rapidly growing worldwide. To support this demand, Ambiq prioritizes practical ultra-low-power edge AI. Ambiq's Apollo4 enables high-performance AI capabilities while consuming minimal power. Some noteworthy AI models by Ambiq include those for heart arrhythmia classification, neural network speech, and speech enhancement and de-

noising. The Heart Arrhythmia Classification example model performs real-time heart arrhythmia classification using a 1-lead electrocardiogram (ECG) and photoplethysmography (PPG). Classification can be executed based on either rhythm or heartbeat. Although Ambiq offers pretrained models for its platform, it also provides software to convert, train, and deploy customized models.



Source: Ambiq

The Neural Network Speech Enhancement (NNSE) integrates three neural networks: keyword spotting (KWS), voice activity detection (VAD), and speech-to-intent (S2I). Both speech enhancement and de-noising features support the end-to-end development and deployment reference implementation of the de-noising and speech enhancement model. Anomaly Detection is an Edgelpulse-based model that detects vibration-based anomalies through accelerometer sensors using neuralSPOT.

neuralSPOT AI Development Kit (ADK) streamlines AI model deployment on Apollo SoCs, thereby accelerating innovation by enabling focus on AI refinement. It is open-source, operating system agnostic, customizable, and facilitates real-time AI development and prototyping of AI features. It supports heartKIT, physioKIT, human activity recognition, voice activity detection, keyword spotting, speech-to-intent, speech enhancement, and speaker ID.

heartKIT is an open-source vital signs reference AI model that enables the creation of personalized, real-time heart-monitoring applications capable of operating on battery-powered devices. heartKIT is part of Ambiq's neuralSPOT ModelZoo library heartKIT offers comprehensive datasets along with

optimized model architectures for monitoring, which include heart rate variability analysis, oxygen saturation detection, and arrhythmia identification on resource-constrained devices without a cloud connection. Ambiq's heartKIT, paired with the Apollo510 MCU, delivers excellent efficiency by reducing heartKIT's CPU usage by ten times and extending the battery life of ECG monitoring devices by three times compared to implementations on the previous generation Apollo4 Plus MCU. Key features of heartKIT include on-device intelligence, custom tasks, and live data visualization. In March 2025, Ambiq won the 2025 Embedded World Award for the heartKIT AI Development Kit (ADK).

“Ambiq’s primary focus lies on delivering energy efficient solutions with extended battery life. The company is also implementing solutions or models for AI which can enable the expansion of ultra-low power edge AI technologies.”

**- Utkarsha Soundankar
Industry Analyst**

Hearable Solutions

OTC hearing aids are rapidly growing due to the U.S. FDA's approval since 2022. To meet this demand, Ambiq developed semiconductor solutions that reduce the power requirements of complex audio processing and AI features needed by advanced hearing aids while also decreasing the need for specialized and expensive ASICs. In January 2025, Ambiq announced the implementation of AI-powered speech enhancement technology using the Apollo510 MCU for over-the-counter (OTC) hearing aids. This technology includes Neural Network Speech De-Noiser (NNSD), which provides a real-time, advanced deep learning model for analyzing audio to eliminate distracting background noise. Neural Network Acoustic Environment Detection (NNAED), a deep-learning AI model, is utilized to identify subtle acoustic cues for adjusting audio processing. Advanced adaptive audio software processing powered by AI delivers a clear and crisp audio experience. It also features personalized sound settings and extended battery life. Ambiq's Neural Network Speech Enhancement (NNSE) is an optimized AI model that removes background noise from speech in real time, allowing for clean speech capture even in noisy environments.

Growth focused

Ambiq prioritizes developing low-power semiconductor solutions for energy-efficient, sustainable, and data-driven technologies. The company also focuses on expanding the applications of AI in mobile and portable devices using Ambiq's ultra-low power system on chip (SoC) solutions. Ambiq has shipped over 270 million units of its chips, with 9 out of 10 global smartwatches and fitness bands utilizing Ambiq processors. The company targets both horizontal and vertical expansion. Horizontally, it is branching out into a wide range of applications, including digital health, the medical industry, industrial edge, and the smart home and building sectors. Following its successful penetration of the wearables market, Ambiq is seeking to expand into other industries, such as remote controls, factory automation, gaming consoles, smart hearables, smart speakers, contactless biometric fingerprint cards, preventative maintenance for industrial IoT applications, asset tracking, security, HVAC systems, and smart metering. Vertically, the company is advancing by developing new products and AI models.

Owing to its exceptional performance, Ambiq has received multiple awards, including the 2025 Artificial Intelligence Excellence Awards from the Business Intelligence Group, the 2024 Distinguished Golden Bull Award, the 2024 A-List Award for Series C+ Growth Catalyst, the Singapore SME 500 Award 2024, and the 2024 IoT Semiconductor Company of the Year by IoT Breakthrough.

Focus on Customer Collaboration

Ambiq collaborates with its customers to provide innovative solutions and supports them throughout the process of launching new products. Some of Ambiq's top customers include Noise, Xiaomi, and Oppo. Ambiq partnered with ThinkAR, an augmented reality (AR) and AI technology provider, to introduce AiLens, lightweight smart glasses powered by Ambiq's Apollo4 System-on-Chip (SoC) and Subthreshold Power Optimization Technology (SPOT®) platform. Ambiq also collaborated with Bravechip, which specializes in Artificial Intelligence of Things (AIoT) Systems in a Package (SIP) solutions and printed circuit board assembly (PCBA) for Bravechip's BCL603S3L chiplet. The BCL603S3L uses Ambiq's Apollo3 Blue Systems-on-a-Chip (SoC) and optimizes the CPU to achieve 6 uA/MHZ power levels, decreasing active power consumption for monitoring parameters such as heart rate, blood oxygen, blood pressure, sleep, step counting, 3DoF, 6DoF, and other applications in smart rings. Smartaly, a developer of handheld electrocardiogram (ECG) monitors, worked with Ambiq to develop an AI-Enabled Medical-Grade ECG Monitor. Smartaly's handheld ECG uses the Apollo3 SoC with built-in AI for processing power, high memory, and low power consumption to run the embedded neural network engine. In May 2025, Ambiq partnered with CardioMedive for their Medive modular health monitoring platform, which runs on the Apollo510. The Medive is the winner of the Romanian Healthcare "Medical Innovation of the Year" award and uses the Apollo510 to lower power consumption, enable seamless connectivity and storage, and deliver high-performance edge AI expected from a clinical-grade all-in-one health solution for cardiovascular care.

Conclusion

Ambiq is a global provider of semiconductor solutions, including the Apollo series, Artasie, SPOT, neuralSPOT, and heartKIT, among others. Ambiq's primary focus is on delivering energy-efficient solutions with extended battery life. The company is also implementing solutions and models for AI, which can facilitate the expansion of ultra-low power edge AI technologies. Ambiq delivers its solutions across multiple industries, including AI, healthcare, gaming, hearables, industrial IoT, intelligent remotes, smart homes and buildings, smartcards, and wearables.

With its strong overall performance, Ambiq has earned Frost & Sullivan's 2025 Global Company of the Year Recognition in the semiconductor solutions for the healthcare industry.

What You Need to Know about the Company of the Year Recognition

Frost & Sullivan's Company of the Year Recognition is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

Best Practices Recognition Analysis

For the Company of the Year Recognition, Frost & Sullivan analysts independently evaluated the criteria listed below.

Visionary Innovation & Performance

Addressing Unmet Needs: Customers' unmet or under-served needs are unearthed and addressed to create growth opportunities across the entire value chain

Visionary Scenarios Through Megatrends: Long-range scenarios are incorporated into the innovation strategy by leveraging mega trends and cutting-edge technologies, thereby accelerating the transformational growth journey

Leadership Focus: The company focuses on building a leadership position in core markets to create stiff barriers to entry for new competitors and enhance its future growth potential

Best Practices Implementation: Best-in-class implementation is characterized by processes, tools, or activities that generate consistent, repeatable, and scalable success

Financial Performance: Strong overall business performance is achieved by striking the optimal balance between investing in revenue growth and maximizing operating margin

Customer Impact

Price/Performance Value: Products or services offer the best ROI and superior value compared to similar market offerings

Customer Purchase Experience: Purchase experience with minimal friction and high transparency assures customers that they are buying the optimal solution to address both their needs and constraints

Customer Ownership Excellence: Products and solutions evolve continuously in sync with the customers' own growth journeys, engendering pride of ownership and enhanced customer experience

Customer Service Experience: Customer service is readily accessible and stress-free, and delivered with high quality, high availability, and fast response time

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty, which is regularly measured and confirmed through a high Net Promoter Score®

Best Practices Recognition Analytics Methodology

Inspire the World to Support True Leaders

This long-term process spans 12 months, beginning with the prioritization of the sector. It involves a rigorous approach that includes comprehensive scanning and analytics to identify key best practice trends. A dedicated team of analysts, advisors, coaches, and experts collaborates closely, ensuring thorough review and input. The goal is to maximize the company’s long-term value by leveraging unique perspectives to support each Best Practice Recognition and identify meaningful transformation and impact.

STEP		VALUE IMPACT	
		WHAT	WHY
1	Opportunity Universe	Identify Sectors with the Greatest Impact on the Global Economy	Value to Economic Development
2	Transformational Model	Analyze Strategic Imperatives That Drive Transformation	Understand and Create a Winning Strategy
3	Ecosystem	Map Critical Value Chains	Comprehensive Community that Shapes the Sector
4	Growth Generator	Data Foundation That Provides Decision Support System	Spark Opportunities and Accelerate Decision-making
5	Growth Opportunities	Identify Opportunities Generated by Companies	Drive the Transformation of the Industry
6	Frost Radar	Benchmark Companies on Future Growth Potential	Identify Most Powerful Companies to Action
7	Best Practices	Identify Companies Achieving Best Practices in All Critical Perspectives	Inspire the World
8	Companies to Action	Tell Your Story to the World (BICEP*)	Ecosystem Community Supporting Future Success

*Board of Directors, Investors, Customers, Employees, Partners

