

中国电子 China (Overseas) Technology

国际 AI+IoT 生态发展大会（2）：RISC-V 借生态协同与 AI 融合驶入规模突破周期

International AI+IoT Eco-Development Conference (1): RISC-V Enters Scale - Breaking Cycle via Ecosystem Synergy and AI Integration

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(Please see APPENDIX 1 for English summary)

事件

7月24日在深圳举办的2025（第六届）国际AI+IoT生态发展大会以“智联万物，赋能未来”为主题，聚焦边缘算力优化、设备互联兼容等技术痛点，推动AI与物联网深度融合。大会释放出边缘计算、卫星物联、端侧AI等领域的产业化信号，预计将加速AIoT技术在智能制造、智慧城市等场景的规模化落地。除了英特尔边缘AI控制器等前沿技术与产品外，大会还包括以下亮点。

点评

大会聚焦多模态交互技术的场景化突破，生物仿真技术驱动交互体验升级。艾迈斯欧司朗展示的生物仿真触觉反馈智能终端，通过高精度压力传感器阵列实现0.01N级力度感知，已应用于医疗康复设备的精准触觉训练。恩智浦推出的融合视觉识别与语音交互的家庭自动化系统，支持多设备联动控制，在海尔智家三翼鸟生态中实现“用户行为预判式服务”，例如根据历史数据自动调节空调温度并推荐健康食谱，使家庭能源消耗降低18%。泰凌微电子的低功耗蓝牙芯片凭借多模态数据融合技术，在可穿戴设备中实现心率、体温、运动状态的实时监测

2025 MCU及嵌入式技术论坛聚焦低功耗与边缘智能融合，展出边缘AI芯片性能突破。兆易创新发布的GD32H7系列MCU集成NPU，支持700亿参数大模型的边缘推理，能效比达8TOPS/W，可满足智能安防摄像头的实时目标识别需求。极海半导体的APM32E4系列芯片采用40nm工艺，功耗较上一代降低40%，已用于智能电表的异常数据实时分析。上海贝岭在电机驱动与控制技术论坛展示的BLDC电机驱动芯片，通过数字锁相环技术实现±0.5%的速度控制精度，适配扫地机器人、工业机械臂等场景。

智能家居领域，AIoT生态构建“预判式服务”。海尔智家三翼鸟团队在大会现场演示基于多模态交互的家居设备协同系统，通过用户行为数据分析实现“无感化服务”，例如当用户靠近冰箱时自动推荐食材搭配方案，同时联动烤箱预热至最佳温度，使家庭生活效率提升30%。美时龙技术发布的车联网融合定位方案，结合UWB与惯性导航技术实现车辆厘米级精准导航，支持自动泊车与充电桩智能调度。泰凌微电子的低功耗蓝牙芯片因技术领先性获“2025年度AIoT创新奖”，其多模态数据融合能力为智能门锁、环境监测设备提供稳定连接支持。

RISC-V凭借开源架构+AI适配性成为技术创新核心议题，RDI联盟构建“三位一体”产业矩阵。大会正式披露RDI（RISC-V数字基础设施）聚力联盟生态蓝图：1）技术层：整合15+IP及芯片企业（覆盖RISC-V IP设计、芯片方案，以及GPU/DPU异构计算厂商），聚焦边缘AI场景的算力架构优化；2）软件层：联合20+软件及生态机构（操作系统商、应用软件服务商、中间件企业），突破AI模型部署与多模态数据交互的适配瓶颈；3）服务层：联动5+产业服务主体（股权投资、产业服务机构），打通“技术-资本-落地”链路。同时，联盟依托北京、成都、武汉等多地创新中心，构建“开源开发平台-测试验证平台-应用示范平台-规范联盟平台”协同网络，目标3年内推动RISC-V在AIoT终端的渗透率提升至30%。

AI融合催生规模级增长曲线，RISC-V市场规模2025年约1190亿人民币，2030年预计达6530亿人民币。核心驱动力源于“RISC-V+AI”的协同效应，RISC-V的开源灵活性、低功耗特性，与AIoT边缘设备的“分布式算力需求”高度匹配，推动其在智能穿戴、工业传感器、智能家居等场景快速渗透。大会明确RISC-V的AI落地路径：1）芯片端：联盟企业已推出异构融合架构（如集成NPU的RISC-V MCU），支持边缘端700亿参数大模型推理（如兆易创新

GD32R 系列芯片，能效比达 8TOPS/W)；2) 软件端：操作系统与中间件企业同步开发 AI 模型轻量化部署工具，实现“训练在云端、推理在边缘”的无缝衔接，降低开发者适配成本；3) 场景端：首批示范应用已落地——智能工业传感器通过 RISC-V 内核实现实时工况分析，智能门锁借助 RISC-V + 多模态交互提升识别精度，验证架构在 AIoT 场景的商用潜力。RISC-V 正通过生态联盟聚合资源、AI 融合突破规模、场景落地验证价值，成为 AIoT 时代“开源架构革命”的核心引擎。

风险

1) 市场竞争加剧 2) 技术验证不及预期 3) 地缘政治与监管风险

 热点速评 Flash Analysis

Fig.1 2030 年全球 RISC-V 市场规模将达到 6530 亿人民币



Source: 第六届国际 AI+IoT 生态发展大会, HTI

Fig.2 AI 技术发展引领行业全链路场景变革



Source: 第六届国际 AI+IoT 生态发展大会, HTI

Fig.3 RDI 聚力联盟与创新中心生态建设



Source: 第六届国际 AI+IoT 生态发展大会, HTI

APPENDIX 1

Summary

Event

The 6th Global AI+IoT Ecosystem Development Conference 2025, hosted in Shenzhen on July 24 under the theme “Connecting Everything, Empowering the Future”, prioritized resolving technical bottlenecks (e.g., edge computing optimization, device interoperability) to accelerate AI-IoT integration. It signaled industrialization trends in edge AI, satellite IoT, and more, driving large-scale deployment across smart manufacturing and smart cities. Key highlights:

Comment

Multimodal Interaction: Biometric Simulation Redefines User Experience. AMS OSRAM unveiled a biometric tactile feedback terminal with a high-precision pressure sensor array (0.01N force sensitivity), deployed in medical rehabilitation for precise tactile training. NXP’s vision-voice integrated home automation system enabled “predictive services” in Haier’s Three Wings ecosystem—e.g., auto-adjusting HVAC and recommending recipes, cutting home energy consumption by 18%. Telink’s low-power Bluetooth chip, leveraging multi-modal data fusion, enabled real-time monitoring of vital signs (heart rate, temperature) and motion in wearables.

The 2025 MCU & Embedded Technology Forum spotlighted low-power, edge-AI convergence. GigaDevice’s GD32H7 series MCU (integrated NPU) supported 70-billion-parameter edge inference at 8TOPS/W, meeting smart surveillance cameras’ real-time recognition needs. Geehy’s APM32E4 series (40nm process) reduced power consumption by 40% vs. its predecessor, powering smart meters’ real-time anomaly detection. Shanghai Belling’s BLDC motor driver chip, using digital phase-locked loops, achieved $\pm 0.5\%$ speed accuracy for robot vacuums and industrial robotic arms.

Smart Home: AIoT Enables “Seamless Predictive Services”. Haier’s Three Wings demonstrated a multi-modal interaction-driven home ecosystem, delivering “seamless services”—e.g., fridges recommending recipes and ovens preheating as users approach, boosting home efficiency by 30%. Mechatron’s V2X positioning solution (UWB + inertial navigation) enabled centimeter-level vehicle navigation, supporting automatic parking and charger scheduling. Telink’s low-power Bluetooth chip won the “2025 AIoT Innovation Award” for multi-modal connectivity, powering smart locks and environmental sensors.

RISC-V: Open-Source + AI Fuel Ecosystem and Market Expansion. RISC-V emerged as a core innovation focus, with the RDI (RISC-V Digital Infrastructure) Alliance building a three-pillar industrial matrix: 1) Technology Layer: 15+ IP/chip firms (RISC-V IP, chip solutions, GPU/DPU heterogeneous computing) optimize edge-AI architectures. 2) Software Layer: 20+ software/ecosystem players tackle AI model deployment and multi-modal interaction bottlenecks. 3) Service Layer: 5+ industrial service entities bridge “technology-capital-commercialization”. Backed by innovation hubs in Beijing, Chengdu, and Wuhan, the alliance aims to build a collaborative network (open-source development, testing, application demonstration, standardization) to boost RISC-V penetration in AIoT devices to 30% within 3 years.

Market data showed RISC-V scaling rapidly: ~RMB 119 billion in 2025, projected to reach ~RMB 653 billion by 2030—driven by RISC-V’s open-source flexibility/low power matching AIoT’s distributed computing demands (adopted in wearables, industrial sensors, smart homes). Its AI deployment path: 1) Chip-side: Heterogeneous architectures (e.g., RISC-V MCUs with NPU, like GigaDevice’s GD32R series, 8TOPS/W). 2) Software-side: Lightweight AI tools enable “cloud training, edge inference,” reducing developer costs. 3) Scenario-side: Pilots (RISC-V-powered industrial sensors, multi-modal smart locks) validate commercial potential. RISC-V is becoming the core engine of the “open-source architecture revolution” in the AIoT era, uniting ecosystems, scaling via AI integration, and proving value through real-world deployments.

Risks

1) Intensifying market competition; 2) Technology performance falling short of expectations; 3) Geopolitical and regulatory risks

附录 APPENDIX

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