Astra SRW1500 Series AI MCUs with Integrated Wireless Connectivity

Product Brief

The SRW1500 Series is an advanced AI-native MCU platform purpose-built for intelligent IoT systems that demand real-time inference, low-latency responsiveness, and advanced wireless connectivity. At its core, the SRW1500 Series integrates a high-efficiency Arm® Cortex®-M52 processor with an Arm® Ethos™-U55 NPU, delivering optimized edge AI performance for always-on sensing, contextual awareness, and on-device decision-making. This tightly coupled MCU + AI architecture enables advanced workloads such as voice trigger detection, sound event classification, and AI-enhanced Wi-Fi® sensing for presence and motion detection. Designed for intelligent edge applications, the SRW1500 Series balances compute efficiency, low power consumption, and system cost optimization, while integrating multi-protocol wireless connectivity within a single device. The SRW1500 Series SDK supports FreeRTOS™ and Zephyr®, and provides a developer-friendly environment with pre-integrated firmware and middleware for AI-accelerated connectivity stacks.

Benefits

- Extend robust, reliable and flexible wireless connectivity into MCU-class IoT devices
- Deploy power-optimized IoT architectures with distributed, localized traffic management
- Utilize tiered inferencing at the far edge of the IoT network for all-day AI experiences
- Unified, open SDK delivers consistent developer experience across compute, and connected-compute product implementations

Applications

- Connected home appliances
- Building automation
- Multimodal AI home hubs
- Charging infrastructure
- Monitoring devices
- Enterprise thin clients

- SINGLE-CHIP AI MCU PLATFORM FOR CONNECTED IOT
- MULTI-LEVEL AI-NATIVE COMPUTE
- SECURE ISLAND WITH PSA LEVEL 3
- MULTI-PROTOCOL WIRELESS CONNECTIVITY

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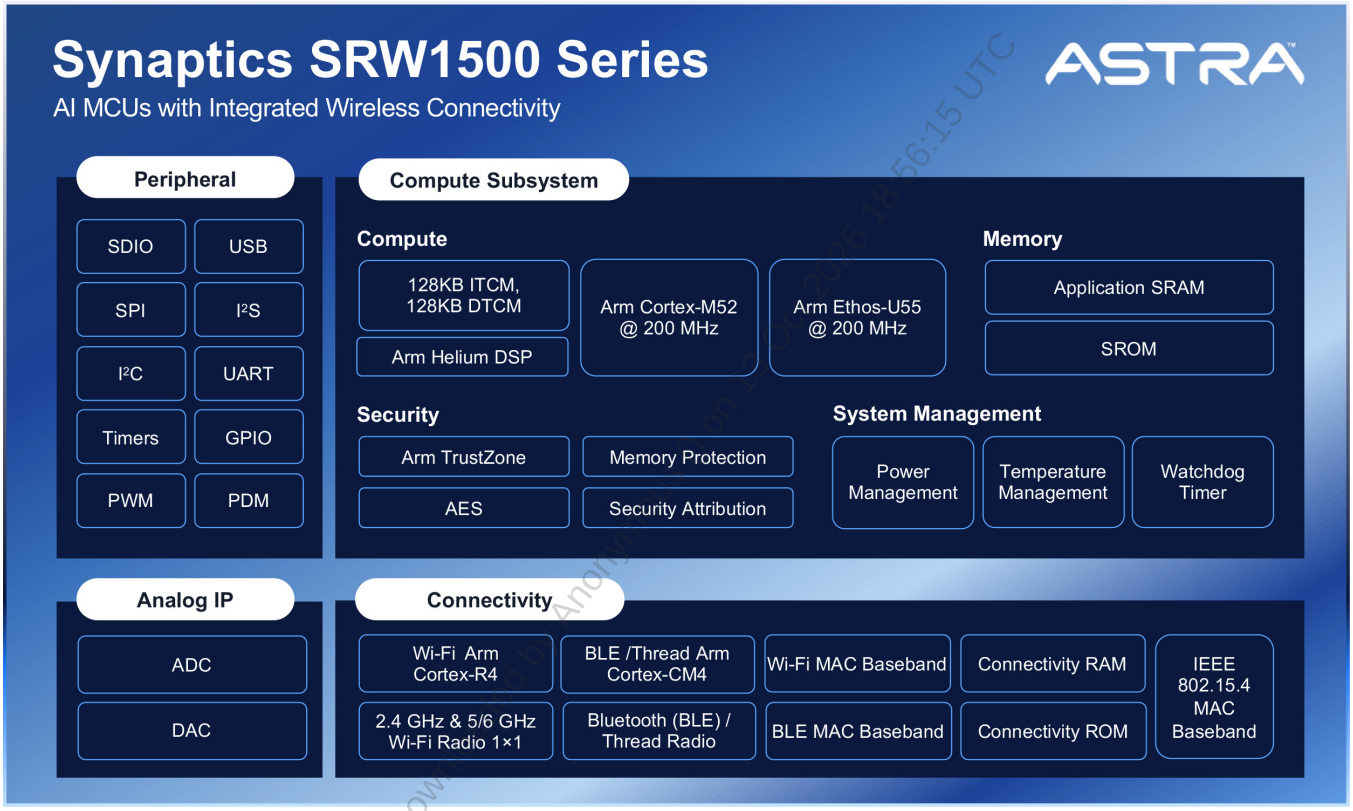
Features

- Arm Cortex-M52 200 MHz with Arm Helium vector extensions, 1MB SRAM
- Integrated Arm Ethos-U55 200 MHz, 50 GOPS NPU for efficient on-device AI inference
- Embedded security architecture including Arm TrustZone®, AES, SAU, and MPU
- Comprehensive peripherals: SDIO, SPI, UART, I²C, PDM, ADC, DAC, PWM, and USB
- Tri-band 1x1 Wi-Fi 7 (2.4/5/6 GHz) operation
- Integrated Bluetooth 6.0 (BLE) and IEEE 802.15.4 radio supporting Zigbee® or Thread® and full Matter® compliance
- Synaptics Smart Co-Ex™ technology for optimized 2.4 GHz Wi-Fi and Bluetooth coexistence
- Supports FreeRTOS and Zephyr operating systems

Block Diagram



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Contact

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