

Overview

The ATM Series Wireless SoCs are Bluetooth and multi-protocol Bluetooth LE / 802.15.4 extreme low-power system-on-chip (SoC) devices from Atmosic. The ATM series integrates standards-compliant radios with a powerful ARM® Cortex® application processor, Random Access Memory (RAM), Read-Only Memory (ROM), and nonvolatile memory (NVM), with industry-leading security features, and state-of-the-art power management to enable maximum lifetime in battery-operated devices.

The extremely low-power ATM Series includes several products with resources scaled to address the various application and protocol requirements for Bluetooth, RF4CE, Zigbee Green Power, Zigbee, Thread, and Sleepy edge node Matter devices.

Designed to extend the battery life for the Internet-of-Things, the radios use less than 1 mA in receive and only 2.5 mA to transmit at 0 dBm. Designed for extreme low-duty cycle operation enables systems to run for significantly extended periods without battery replacement. In addition, the ATM series from Atmosic supports operation from energy harvesting sources, including RF, photovoltaic, TEG (Thermoelectric generator), and motion. Innovative wake-up mechanisms are supported to provide options for further power consumption reduction.

Applications

Industrial and Enterprise

- Industrial IoT Sensors
- Remote Monitors
- Building Management

Home

- Building Management
- Consumer Electronics
- Remote Controls
- Lighting
- Security
- Environmental Control & Advanced Home Automation
- Human Interface Devices (HID)
- Entertainment

Features	ATM2	ATM3	ATM33/e	ATM34/e
MCU Core	ARM Cortex-M0@16MHz	ARM Cortex-M0@16MHz	ARM Cortex-M33F@64MHz	ARM Cortex- M33F@64MHz
Protocols	BLE 5.0	BLE 5.0	BLE 5.3	BLE 5.4 + 802.15.4
Memory	1MB Flash RAM 128 KB ROM 256 KB + OTP 4KB	1MB Flash RAM 128 KB ROM 256 KB + OTP 4KB	NVM 512KB/1536KB RAM 128 KB ROM 64 KB	NVM 512KB/1536KB RAM 256 KB ROM 64 KB
Security	AES-128 TRNG	AES-128 TRNG	AES-256, SHA-256, TRNG ARM TrustZone Secure Boot, Secure OTA	AES-256, SHA-256, TRNG ARM TrustZone Secure Boot, Secure OTA
Radio - Tx Power	+4 dBm	+4 dBm	+10 dBm	+10 dBm
Energy Harvesting	No	✓ (ATM3)	✓ (ATM33e)	✓ (ATM34e)
Peripherals	SPI(2), I2C(2), QSPI, PDM(1) 10-bit ADC, KSM, QDEC, UART(2), PWM(8)	SPI(2), I2C(2), QSPI, PDM(1) 10-bit ADC, KSM, QDEC, UART(2), PWM(8)	SPI(2), I2C(2), QSPI, I2S, PDM(2), 11-bit ADC, KSM, QDEC, UART(2), PWM(8)	SPI(2), I2C(2), QSPI, I2S, PDM(1), 16-bit ADC, KSM, QDEC, UART(2), PWM(8), LED driver
Packages	QFN: 5x5 & 7x7 DRQFN: 6x6 WLCSP	QFN: 5x5 & 7x7 DRQFN: 6x6 WLCSP	QFN: 5x5 & 7x7 WLCSP	QFN: 5x5 & 7x7



ATM34 Series

The ATM34/e series is built upon our latest generation architecture bringing the robust and trusted high performance but now with support for both 802.15.4 and Atmosic's award-winning Bluetooth LE technology.

With ATM34/e series offers a 64-MHz ARM® Cortex®-M33, +10dBm RF transmit power, and AES-256 encryption and ARM® TrustZone® enabled security features, along with plenty of memory for to the most demanding applications

Bluetooth zigbee THREAD matter



ATM2 Series

The Atmosic ATM2 Series solutions are Bluetooth® 5 standard-compliant and enhanced with our Lowest Power Radio and On-demand Wake Up technologies to provide superior lower power consumption in comparison with other Bluetooth products. The ATM2 series is suitable for a broad array of applications such as wearables, personal and asset trackers, beacons, remote controls, keyboards, and mice. The ATM2 Series is available in an array of different memory and package configurations to fit specific application needs.

ATM3 Series

With a similar architecture to the ATM2, the Atmosic ATM3 Series adds the management of energy harvesting, energy storage, and power distribution to further extend battery life or enable battery free-operation for many applications. The ATM3 can harvest RF energy directly with an on-chip RF harvester or utilize external energy from photovoltaic, thermal, or mechanical/kinetic harvesting sources. Like the ATM2, the ATM3 is available in an array of different memory and package configurations to fit specific application needs.

ATM33 Series

The ATM33/e series is built upon our latest generation architecture that offers higher performance to support the most demanding applications. With feature enhancements like a 64-MHz ARM® Cortex®-M33, +10dBm RF transmit power, and AES-256 encryption and ARM® TrustZone® enabled security features, the ATM33 can support the next generation of IoT device solutions.

Lowest Power Standards-based Wireless Solutions

3-5x Lower Active Power Consumption Extends Battery Life

Multiprotocol Support

Bluetooth LE and 802.15.4 (Thread/Matter)

Integrated Energy Harvesting

Leverage harvested energy to make batteries last forever
Self-powering battery-free devices