SAM Series
Advanced multiregional RAIN RFID modules

The Identix SAM series is a robust family of multiregional RAIN RFID System-on-Modules (SOMs) that integrate Bluetooth Low Energy (BLE), Wi-Fi, and USB connectivity into a single, compact solution.

Performance Variants

The SAM series is available in three distinct models, each delivering different levels of performance to address a wide range of application requirements:

- o SAM300: Up to 300 tags per second read rate with -73 dBm maximum RX sensitivity
- o SAM500: Up to 700 tags per second read rate with -81 dBm maximum RX sensitivity
- o SAM700: Up to 1100 tags per second read rate with -89 dBm maximum RX sensitivity

Compact, Powerful, and Versatile

Measuring just 32 mm x 36 mm, Identix SAM modules deliver high RFID output power and support up to four RF antenna ports. With integrated BLE, Wi-Fi, and USB, they are engineered for seamless integration into a broad range of applications, including:

- o High-performance handheld devices and sleds
- o RFID reading stations
- o Smart shelves and cabinets
- o Connected refrigerators
- o Fixed RFID readers

Cutting-edge RFID technology

Powered by the latest Impinj Ex10 RAIN RFID reader chips, the SAM series delivers industry-leading performance while maintaining low power consumption. These modules offer multiregional support, making them ideal for global deployments and enabling OEMs to reduce costs associated with development, manufacturing, certification, and integration.

High flexibility for developers

Each SAM module features an embedded high-performance dual-core 32-bit microcontroller and ample onboard memory. This allows developers to run custom embedded applications directly on the module without the need for an external host processor.

Alternatively, the onboard MCU can be disabled or bypassed for direct access to the Impinj chip, or used in conjunction with an external host, providing maximum flexibility for system designers.

Outstanding range and power

With programmable RFID output power ranging from 0 dBm to +33 dBm, SAM modules support long-range tag reading up to 20 meters or more, depending on antenna and tag configuration.

Technical Specifications

- RAIN RFID SOM Module EPCglobal® UHF Class 1 Gen 2 / ISO 18000-63
- RFID operating region: Worldwide—FCC, ETSI, Anatel, etc.; configurable via software, 865–928 MHz
- Four RFID antenna ports
- Maximum TX power: +33dBm
- Maximum RX sensitivity
  - o SAM300: –73 dBm
  - o SAM500: –81 dBm
  - o SAM700: –89 dBm
- Maximum reading performance
  - o SAM300: 300 tags/s
  - o SAM500: 700 tags/s
  - o SAM700: 1100 tags/s
- Integrated 2.4 GHz radio with Wi-Fi 802.11n (150 Mbps) and BLE 5
- Communication interfaces
  - o USB(1)
  - o SPI(2)
  - o I2C(1)
  - o UART(2)
  - o GPIO (8)
- Dual-core microcontroller up to 240 MHz, 8 MB Flash, 4 MB PSRAM, 512 KB SRAM, and 384 KB ROM
- Power supply: +5VDC
- Power consumption: 9 W peak while transmitting at +33 dBm
- Dimensions: 32 mm x 36 mm x 4 mm
- Certifications: FCC, CE, and Anatel

For further information, visit

idntx.com