AT88RF020

13.56 MHz RFID READ/WRITE 2048-BIT EEPROM

FEATURES

- ISO 14443-2B and ISO 14443-3B Compliant Operation
- Password Protected
- Data Locking
- One-way Transaction Counter
- Each Device Uniquely Serialized
- 106 Kbits/sec Data Rate
- On-chip tuning capacitor
- 100,000 Write Cycle and 10 Year Data Retention Reliability

The AT88RF020 is a 13.56 MHz Radio Frequency Identification (RFID) device that includes an on-chip EEPROM-based (non-volatile) memory. The wireless interface complies with "Type B" operation of specification ISO/IEC FDIS 14443-2:1999(E) and ISO/IEC FDIS 14443-3:2000(E), dated 5/2/00 and 7/13/00, respectively.

This device may be used in applications where one or more RFID devices will be simultaneously situated within an intelligent reader/writer RF field. Communication between the RF reader/writer and this device will take place through the use of the featured ISO14443-3 anti-collision command set.

The AT88RF020 contains 2048 bits of read/write, low-power EEPROM memory, organized as thirty-two 64-bit pages. Write operations are designed to finish in less than 2 ms. Atmel guarantees 100,000 write cycle reliability and 10-year data retention.

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This device has built-in security features that include a 64-bit password protect where read or write operations are only permitted after password confirmation, including data locking which prevents further writing of data to a page. Once the lock bit is set, it cannot be cleared. The AT88RF020 features a one-way transaction counter that allows tracking of individual device usage. The counter is factory set at zero and cannot be reset. Each device is uniquely serialized at the factory.

This device includes an on-chip internal tuning capacitor. The addition of an external coil antenna permits it to operate as a complete tag.

MEMORY MAP

The memory array within this device is organized in the following manner:

	BYTE 0	BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7
Page 0	[Unique Tag ID			]	[Lock Bits			]
Page 1	[Application Data			]	[Reserved			]
Page 2	[Signature					]	[Counter	]
Page 3	[Password							]
Page 4	—	—	—	—	—	—	—	—
...								
...								
Page 31	—	—	—	—	—	—	—	—

APPLICATIONS

Product Authentication: Protecting brands against fraudulent knock-offs is a major concern of manufacturers of designer apparel and luxury products. RFID offers a cost effective method of identifying genuine articles, yet is prohibitively expensive to copy.

Access Control: RFID offers high security access control while minimizing the inconvenience to the authorized person. RFID facilitates compartmented access, assuring authorized persons have access to only the levels for which they are cleared.

Transit Fare Collection: With contactless operation and fast transaction time, RFID offers a cost effective way to collect and keep track of mass transit fare collection, allowing distance-based pricing.

Please email us at **RFID@atmel.com** for further information.

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