DS1964S

DeepCover Secure Authenticator iButton with SHA-256

General Description

DeepCover® embedded security solutions cloak sensitive data under multiple layers of advanced physical security to provide the most secure key storage possible.

The DeepCover Secure Authenticator iButton® (DS1964S) combines crypto-strong bidirectional secure challenge-and-response authentication functionality with an implementation based on the FIPS 180-3-specified Secure Hash Algorithm (SHA-256). A 512-bit user-programmable EEPROM array provides nonvolatile storage of application data. Additional protected memory holds a read-protected secret for SHA-256 operations and settings for memory protection control. Each device has its own guaranteed unique 64-bit ROM identification number (ROM ID) that is factory programmed into the chip. This unique ROM ID is used as a fundamental input parameter for cryptographic operations and also serves as an electronic serial number within the application. A bidirectional security model enables two-way authentication between a host system and slave-embedded DS1964S. Slave-to-host authentication is used by a host system to securely validate that an attached or embedded DS1964S is authentic. The DS1964S communicates over the single-contact 1-Wire® bus at overdrive speed. The communication follows the 1-Wire protocol with the ROM ID acting as node address in the case of a multidevice 1-Wire network.

Applications

Authentication of Consumables

Secure Feature Control

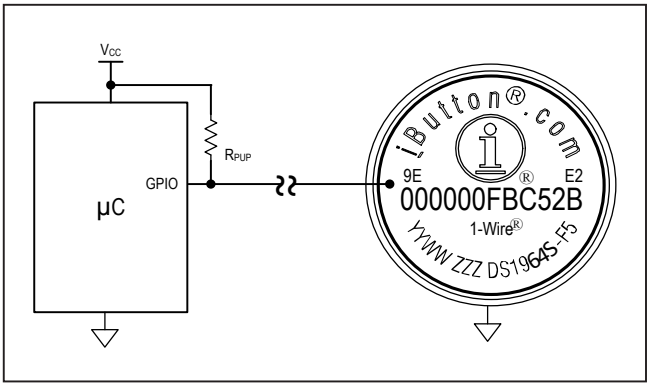
Examples of Accessories

PART	ACCESSORY
DS9093RA	Mounting Lock Ring
DS9093A	Snap-in FOB
DS9092	iButton Probe
DS1402D-DR8+	Blue Dot Receptor Cable

Features

- Symmetric-Key-Based Bidirectional Secure Authentication Model Based on SHA-256
- Strong Authentication with a High-Bit-Count User-Programmable Secret and Input Challenge
- 512 Bits of User EEPROM Partitioned Into Two Pages of 256 Bits
- User-Programmable and Irreversible EEPROM Protection Modes Including Write and Read Protect and OTP/EPROM Emulation
- Unique Factory-Programmed, 64-Bit Identification Number
- Single-Contact 1-Wire Interface
- Operating Range: -40°C to +85°C
- ±8kV HBM ESD Protection (typ)
- Durable Stainless-Steel Enclosure Withstands Harsh Environments and Conditions

Typical Application Circuit



***Ordering Information* appears at end of data sheet.**

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