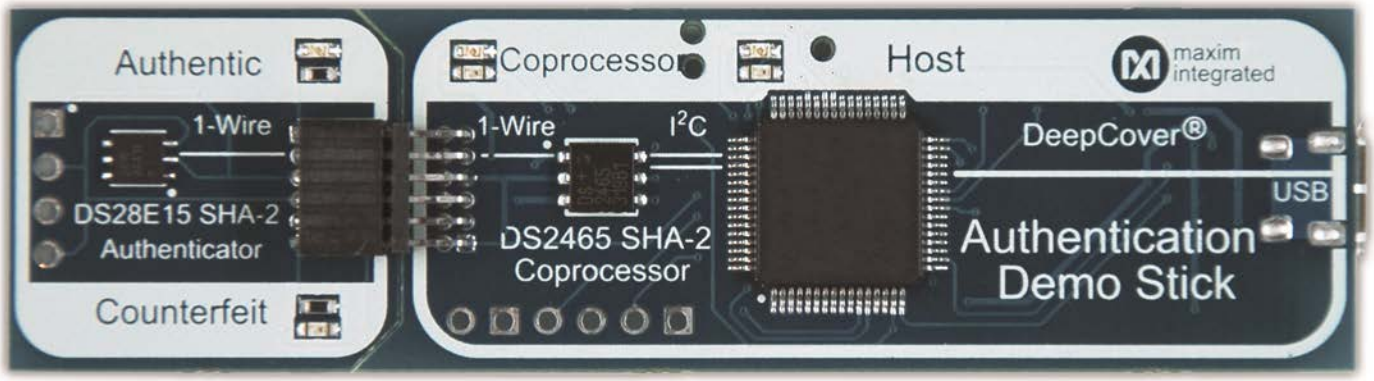
DS28E15DEMOK Authentication Demo Stick



The DS28E15 Authentication Demo Stick comprises a host board, an authenticator DUT board, and a USB cable. The host board contains a MAXQ622 microcontroller and a DS2465 secure coprocessor. The microcontroller communicates over the I^2C interface to the DS2465, and the DS2465 bridges I^2C to 1-Wire® to communicate with the DS28E15 IC (one on the top side, one on the bottom side) on the authenticator DUT board. During the demo, the top side DS28E15 is programmed with an authentic secret to simulate an authentic product, and the bottom side is not programmed to simulate an unauthentic product. The USB connection is used for power only.

The DS28E15 Authentication Demo Stick is not intended to be a fully functional evaluation kit. For the full evaluation kit, order the DS28E15EVKIT#.

Quick Start Guide

1. Take the Authentication Demo Stick out of its packaging and ensure that the two circuit boards are connected as shown.
2. Using the provided micro-USB cable (or equivalent), connect the demo board to a USB power source such as a computer or a USB wall charger. **Note:** USB is used only as a power source (5V). No PC software is required.
3. Every time power is applied, the LEDs flash to indicate that the demo is initializing. In particular, the top side authenticator is programmed with an authentic secret. **Note:** The authenticator board contains an authenticator on both sides. During power-up, only the top side authenticator is programmed with the secret.
4. Once initialization is completed, the demo repeatedly cycles through an authentication sequence. If the secrets match, then the LED labeled **Authentic** illuminates.
5. While keeping the USB cable connected, gently disconnect the small authenticator board, flip it 180° horizontally, and reconnect it so that the backside is now on top. Since the second authenticator is not programmed during power-up, it does not have the correct secret, and the LED labeled **Counterfeit** illuminates.
6. (Optional) If the USB cable is removed and reconnected, return to step 2. Regardless of previous usage or previous programming, whichever authenticator IC is currently on the top side is programmed with the authentic secret.

DS28E15DEMOKIT Features

- Simple, yet powerful demonstration of symmetric SHA-256 secure authentication
- Easy integration onto breadboards
- Uses USB only for power

DS28E15 IC Features

- Single-contact 1-Wire interface
- Safeguards the secret using advanced die-level protections
- 512-bit user EEPROM with various protection modes partitioned into two pages with 100k write cycles
- Unique factory-programmed 64-bit ROM ID number
- Operating range: 3.3V ±10%, -40°C to +85°C
- ±8kV HBM ESD protection (typ) on IO pin
- 6-pin TDFN, 2-pin SFN contact, 6-pin TSOC packages

DS2465 Coprocessor Features

- Secure storage for host symmetric authentication secret
- Offloads SHA-256 processing
- I^2C to 1-Wire protocol conversion
- 6-pin TSOC package

Contents

- Host board with the MAXQ622 and the DS2465
- DUT board with two DS28E15 ICs—one on front and one on the back
- USB cable

For additional information, visit: http://www.maximintegrated.com/DS28E15DEMOK
If you have trouble with this demo board, open a support ticket here: http://support.maxim-ic.com/1-wire

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