

### Solution Summary

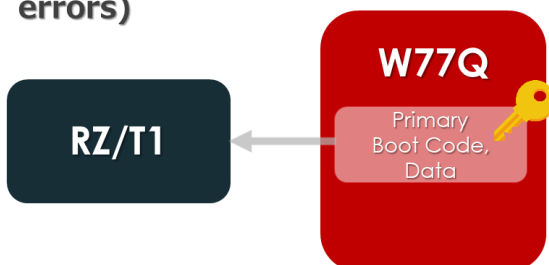
Winbond secure flash W77Q provides 'add-on' security in the boot code integrity and firmware resilience on [RZ/T1](#) platform.

### Features/Benefits

- W77Q secure flash memory is compatible to standard SPI NOR flash memory.
- W77Q can be "Root-Of-Trust" for ROM-Less SoC.
  - W77Q automatically verifies boot code by itself and raises reset pin from "L" to "H" for SoC.
  - If the boot code was hacked, W77Q automatically jump to redundant boot code for recovery.
- Platform Firmware Resilience supported
  - Referenced to NIST SP800-193

### Diagrams/Graphics

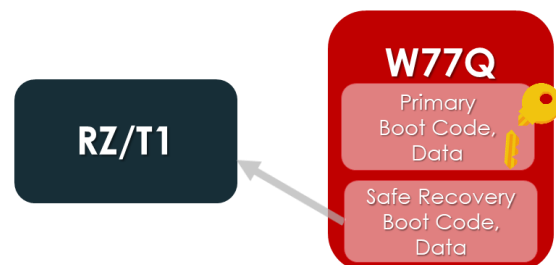
#### Self Integrity Protection (Verify Boot Code to detect errors)



#### □ Self Integrity Protection

- Primary Boot Code shall be verified from falsification or errors
- After passed the verification, SoC can start fetching (Secure Boot)
- Two control methods for SoC to wait; A H/W pin (RSTOUT#) or S/W loop

#### Safe Fallback = Firmware Resilience (Recovery)



#### □ Safe Fallback

- If primary Boot Code had problem, switch to other redundant Boot Code for recovery automatically

### Target Markets and Applications

- Network, IoT
- Industries requiring security guideline
  - ISO/IEC62443-4-2
  - CC/EAL, GP/SESIP, ASIL certification



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From R&D through advanced manufacturing to dedicated customer service, Winbond Electronics Corporation is a total memory solutions provider.

Winbond's product portfolio consists of specialty DRAM, mobile DRAM, code storage Flash memory, and TrustME<sup>®</sup> secure Flash memory products. The company serves customers in the communications, consumer electronics, automotive, industrial, and computer peripherals markets, supplying its products directly or via a global network of authorized distributors.

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Winbond's combination of advanced semiconductor technologies developed in-house and close relationships with customers support its position as a trusted supplier of memory products.

Company Name	Winbond Electronics Corporation
Date of Establishment	1987-09-29
Chairman	Arthur Yu-Cheng Chiao
Vice Chairman	Thung-Yi Chan
President	Pei-Ming Chen
Capital Stock	39.8 billion Taiwan dollars (as of October 2020)
Number of employees	3048 (as of October 2020)
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