



Keywords: reset circuit, power supply, power controller, fault, power fail, telecom applications, telecom, radio link, point to point, Apr 09, 2003

APPLICATION NOTE 1987

Auto-Retry Controller Suits Telecom Applications

Abstract: In Telecom systems such as Radio Link and Point to Point, the point-to-multipoint controller shuts the system off in the event of a fault. When the fault is brief (for instance, a momentary short circuit due to measurement and calibration actions), the auto-retry controller attempts to restart the system.

The MAX1637 (IC2 in **Figure 1**) is a popular device for telecom applications. It offers PWM operation, small size, high MOSFET-drive capability, wide V_{IN} and V_{OUT} ranges, and excellent protection against over- and under-voltage faults.

Undervoltage is related to a short circuit: V_{OUT} falls when a short circuit is present and the controller cannot regulate the supply voltage. If that voltage remains below 70% of its nominal value for 6144 clock cycles, IC2 latches and turns both devices off. To restart IC2, you must either switch off the power supply or toggle the active-low SHDN signal.

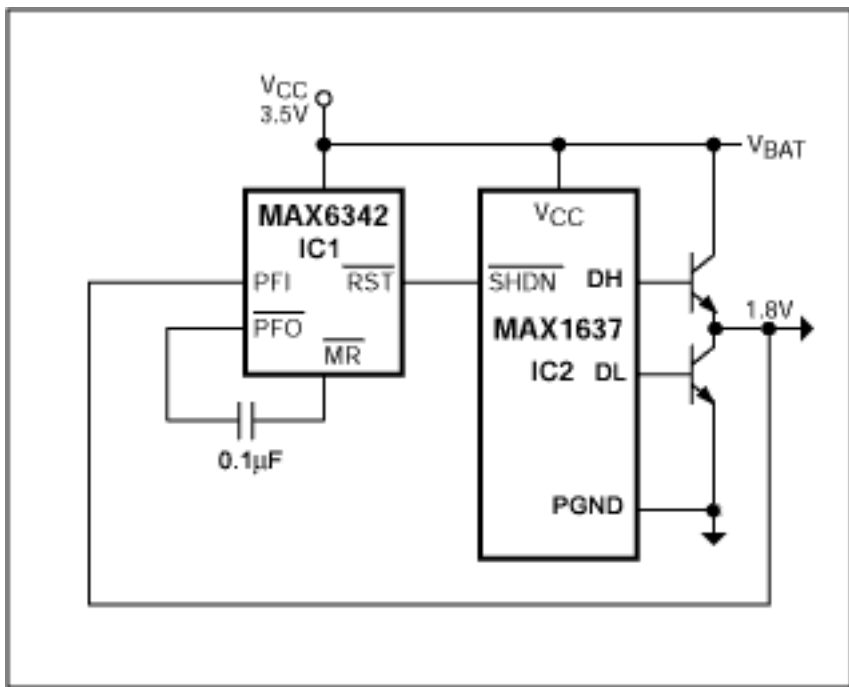


Figure 1. The circuit adds auto-retry capability to IC2, thereby enhancing its usefulness for telecom and other applications.

The microprocessor supervisor (IC1) includes an internal power-fail comparator and manual-reset circuitry (MR). IC1's PFI input detects whether V_{OUT} (1.8V) is above the internal reference voltage (1.25V). If V_{OUT} falls below 1.25V (due to a short circuit, for instance), the active-low PFO output generates a pulse using the internal 60k pull-up resistor and external 0.1µF capacitor. The pulse drives active-low MR low, causing active-low RST to assert and pull active-low SHDN low. After a timeout delay of 140ms, active-low RESET and active-low SHDN go high, re-enabling IC2. This supervision is also in effect when the supply voltage is first switched on: the 3.5V rail stabilizes after 140ms, causing active-low RST to go high and activate IC2.

A similar version of this article appeared in the September 2, 2002 issue of *Electronica* magazine.

Application Note 1987: www.maxim-ic.com/an1987

More Information

For technical questions and support: www.maxim-ic.com/support

For samples: www.maxim-ic.com/samples

Other questions and comments: www.maxim-ic.com/contact

Keep Me Informed

Preview new application notes in your areas of interest as soon as they are published. Subscribe to [EE-Mail - Application Notes](#) for weekly updates.

Related Parts

MAX1637: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

MAX6342: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

AN1987, AN 1987, APP1987, Appnote1987, Appnote 1987

Copyright © by Maxim Integrated Products

Additional legal notices: www.maxim-ic.com/legal