

APPLICATION NOTE 935

Single IC Manages Battery Backup

The following application note shows a battery backup circuit that switches from a wall adaptor to battery cells using the MAX933 comparators. When the wall adaptor is removed Q1 provides a low-resistance path from battery to regulator.

Instruments powered by a "wall adapter" with battery backup typically diode-OR the battery and wall-adapter connections. That arrangement carries a penalty, however-the diode in series with the battery limits the minimum voltage at which the battery can supply power.

One alternative is a dual-comparator/reference IC, which monitors the battery and wall-adapter voltages with respect to its internal reference voltage (**Figure 1**). The open-drain output of comparator B (with pull-up to 3.3V) provides a low-battery warning in the form of a low-to-high transition when battery voltage drops to 3.6V. The open-drain output of comparator A (with pull-up to 9V) flags low wall-cube voltage in the same way, with a warning threshold of 3.9V.

More Information

MAX933: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)